

Sample Data Collection Monthly Report January 2003



**Submitted to:
U.S. Army Medical Materiel Agency
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland**



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Report # 012

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Introduction: The U.S. Army Medical Material Agency (USAMMA) serves as the Army Medical Department's (AMEDD) strategic level medical logistics organization. USAMMA's mission is to enhance the medical material readiness throughout the full range of military health service support missions worldwide. In this role USAMMA develops and implements innovative logistics concepts and technologies as well as promoting military and medical logistics information and knowledge.

The agency's core skills and technologies center on conducting life cycle management for commercial and non-developmental items, sustaining and modernizing the medical force, supporting exercises and contingency operations and disseminating medical logistics information and knowledge. Two of USAMMA's critical groups tasked with this mission are the Maintenance Engineering Operations Directorate (MEOD) and the Technology Support Division (TSD). The MEOD is responsible for the maintenance of all the medical equipment while the TSD is responsible for ensuring the medical technology is sustainable and meets current and future utilization requirements.

In order to enhance the strengths of MEOD and TSD, USAMMA has contracted, (contract # DAMD17-01-D-0004), with McAdams Technologies Inc., (subcontracted to Information Systems Support Inc. March 2001), to develop and implement a sample data collection program for targeted medical devices. The overall focus of this program is to assist USAMMA in supplying medical field equipment, and DEPMEDS facilities with current, and sustainable medical technology in a fiscally efficient manner.

Scope: This document, the twelfth Sample Data Collection (SDC) report, includes information gathered for a deployed unit that asked for assistance in finding a properly sized replacement for a malfunctioning fresh frozen plasma freezer as well as a need for a reagent freezer. Also, a letter of obsolescence for a popular bacteriological incubator is included along with a possible replacement item for that incubator. Additionally, some preliminary work was done in choosing a selection of three blankets for the Bair Hugger forced-air patient warmer out of the 15 available from the manufacturer should the Bair Hugger be included in TO&E assemblages. Those selected should fill the majority of the foreseeable needs. Furthermore, information that was uncovered during research accomplished to determine if the airworthiness testing of the Cardiac Science Powerheart AED may be in conflict with the Patient Movement Items (PMI) Zoll Defibrillator with AED option. Other information is also included that compares the current BCI 3303 and the PalmSAT 2500 pulse oximeters to determine if the PalmSAT 2500 is comparable with the BCI unit. There is also information on a refrigerator that was ordered for storing reagents for the iSTAT chemical analyzer. Finally, there is information pertaining to a selection of new Test, Measurement, and Diagnostic Equipment (TMDE) that the MEOD is recommending be supplied to enhance the medical maintenance capabilities of TO&E units.

Technology Support Issues

The following equipment and technology issues were addressed during January.

Fresh Frozen Plasma Freezer issue in Bosnia-Herzegovina

A priority request was received from Task Force Medical Eagle, Bosnia-Herzegovina to find a suitable replacement for an existing fresh frozen plasma freezer. A copy of the request is found at Appendix 1. The unit needed a properly sized freezer along with the ability to store frozen reagents at a different temperature range from frozen plasma, which added to the complexity of the request. The ideal replacement would be one freezer with two separately controlled compartments as one compartment was needed for storing reagents between 0 and -18 degrees Celsius while another compartment was required to store fresh frozen plasma at -18 degrees Celsius or colder.

The problem at Task Force Medical Eagle arose when they ordered a replacement freezer for their unreliable, existing blood bank freezer. The replacement unit sent to them, based on the UA, was a 500 unit, top-loading, chest-type freezer that was too large to be used in the ISO shelter. The ceiling was too low to allow for fully opening the lid and the height of the unit would necessitate a stepping stool of some sort for loading and unloading. The 500-unit capacity was also too large for the actual needs of the medical unit. Upon further investigation, Task Force Medical Eagle personnel said a freezer with a capacity for 75 units of frozen plasma would meet their requirement.

Commercially available dual-compartment freezers with separate temperature controls could not be located. Instead, with the concurrence of the laboratory combat developer, a freezer that was both available and could be set at the required temperature ranges was recommended to the unit. The freezer recommended was NSN 4110-01-450-0060, Freezer, Mechanical, Blood Plasma, Model CTF1-1B-06, manufactured by Revco Technologies. The freezer has a capacity of 75 units of plasma.

Blankets for Bair Hugger Patient Warmer



Augustine Medical, maker of the Bair Hugger patient warmer, has over 15 varieties of blankets that can be used with their unit. Table 1 is a list of all the blankets available and the three in bold, from a clinicians point of view, were selected as the smallest number of options that could fill all the foreseeable needs of the deployed medical team. Although the Bair Hugger has not yet been added to any deployment packages, some units are purchasing them on their own. Several other patient warmers are currently being investigated but in the meantime the Bair Hugger is still finding it's way into field use. The cited drawbacks of the Bair Hugger for deployed units are its power requirement and size. At over 1,000 Watts, the Bair Hugger could quickly reach the capacity of the generator authorized for the unit. Also the size and weight were said to be less than ideal. Table 2 includes the specifications.

Fig. 1 Bair Hugger Model 505

Table 1. Bair Hugger Blanket Options

Model Number	Nomenclature	Recommended as a Supply Item (Yes/No)
110	Outpatient	No
300	Full Body	No
305	Chest Access	No
310	Pediatric	No
315	Multi- Access	No
522	Upper Body	No
525	Lower Body	No
537	Small Lower Body	No
530	Pediatric Long	No
536	Pediatric Short	No
540	Torso	Yes
555	Pediatric Full Access	No
560	Catheterization Lab	No
570	Surgical Access	Yes
610	Full Body Surgical	Yes

Table 2. Specifications for the Model 505 Bair Hugger

Dimensions	13”H x 10”W x 11” D
Leakage Current	Meets hospital and regulatory standards
Weight	11.5 pounds (5.2 kg)
Filter	High-efficiency 0.2 microns
Operating Temperature :	
High	43°C +/- 3°C
Medium	38°C +/- 3°C
Low	32°C +/- 3°C
Device Rating :	
	110-12- VAC, 60 Hz, 9.5 Amperes
	100 VAC, 50/60 Hz, 9.5 Amperes
	220-240 VAC, 50 Hz, 4.5 Amperes

AMSCO (now STERIS) Proof Incubator

During the steam sterilization process, a quality assurance measure is to put a sealed vial with heat-sensitive spores, bacillus stearothermophilus, into each load. Those vials are then cultured in an incubator heated to 55°C to see if they are still viable. If the spores incubate, the entire load is then re-sterilized. A widely-used incubator in the inventory has been the Proof brand of incubator sold by AMSCO (now STERIS Corporation) under part numbers NA127 and NA053. However, these units are obsolete and are no longer being sold or serviced by STERIS Corporation. Appendix 2 is a copy of the letter received from STERIS concerning the incubators. As a replacement, STERIS has a dual-temperature model called Verify. Their

part number is S3080 and it can process as many as 28 vials. The NSN for the Verify Steam and Ethylene Oxide Dual Incubator is 6640-01-446-2597 and is part of the M302 Unit Assemblage. The dual incubator requires two supply items, part number S3060 Sterilization Indicator (6530-01-446-1643) and part number S3075 Sterilization Indicator Activator (6530-01-446-4401). This incubator was designed for use with either steam sterilization or Ethylene Oxide so it has two temperature settings.



Fig. 2. AMSCO Proof Incubator

Comparison of Powerheart AED and Zoll M Series CCT Defibrillator submitted for airworthiness certification for PMI.

The following was researched in regards to a memorandum regarding the certification of UH-60A/L airworthiness for a Cardiac Science Powerheart Automated External Defibrillator (AED) Model 921ORD. A



Fig. 3. Cardiac Science Powerheart AED

question came up in regards to the Joint Requirements Clinical Advisory Board (JRCAB), Patient Movement Items (PMI) group adopting the Zoll AED as the PMI standard and the requester was asking if this was a disconnect. Looking into the issue, there doesn't appear to be any competing issues. The Powerheart only operates as an automated external defibrillator, which is a device used to administer an electric shock through the chest wall to the heart. Built-in computers assess the patient's heart rhythm, judge whether defibrillation is needed, and then administer the shock. Most AEDs are designed for use by nonmedical personnel such as police, firefighters, flight attendants, and other properly trained lay rescuers. The AED only treats a heart in ventricular fibrillation (VF), an irregular heart rhythm. In cardiac arrest without VF, the heart doesn't respond to electric currents but needs medications. The victim also needs breathing support.

In contrast to the Powerheart, the Zoll unit in question is the Series M CCT defibrillator which has an AED option. It is designed for use by properly trained healthcare providers for monitoring patients and, if necessary, applying defibrillation. The AED option of the Zoll defibrillator could be used as a second opinion should an erratic heartbeat indicate defibrillation may be necessary but the unit is capable of much more, including pulse oximetry, EtCO₂, non-invasive blood pressure, and fully interpretive 12-lead ECG. There is no disconnect, both units provide differing capabilities



Fig. 4 Zoll M Series CCT

(AED general information included from American Heart Association Questions and Answers page at http://216.185.112.41/cpr_aed/cpr_aed_menu.htm)

Comparison of BCI 3303 vs PalmSAT 2500 pulse oximeters.



Fig. 5. Nonin PalmSAT 2500

There was a request to determine if the PalmSAT 2500 is interchangeable with the BCI 3303 model pulse oximeters. Considering where they were being used. Even though there were several areas where there were differences, the two served the same purpose and we considered them to be interchangeable. It was believed that the reading storage function of the BCI 3303 and the alarms weren't required. The field use of these units appears to be more of a vital signs check and not a constant monitoring unit that would probably require an alarm.



Fig. 6. BCI 3303

In a comparison of specification (see Table 3), both the PalmSAT 2500 and the BCI 3303 pulse oximeters match up well with each other.

- Even though the upper end of the operating and storage temperatures are LOWER for the PalmSAT 2500, they are the SAME as the Nonin Onyx (9500) which is already found in CSH hospitals.
- The PalmSAT can run on (4) AA batteries or a rechargeable battery (which requires purchase of the optional battery charger) while the BCI 3303 runs on rechargeable batteries only so the charger is part of the system.
- The PalmSAT 2500 has a 45 hour life with the rechargeable battery (100 hours normal operation with AA batteries) or continuous if you operate the pulse oximeter while it's in the recharger. The BCI 3303 battery lasts approximately 24 hours between charges but requires 6 hours to fully charge.
- The PalmSAT 2500 has smaller physical dimensions than the BCI 3303 but, that's a moot point since the BCI 3303 comes in a shipping container that could probably house about five or six other units (lots of foam to fill the space).
- Both the BCI 3303 and the PalmSat 2500 have memory feature but the PalmSAT 2500 would need additional software and the information downloaded to a PC to view patient trends while the BCI 3303 has on-screen recall for up to 99 patients during that 24 hour memory limit.

Table 3. Specifications of BCI 3303 and Nonin PalmSAT 2500

	BCI 3303	Nonin PalmSAT 2500
Pulse Rate	+/- 2%	+/- 3%
Pulse Range	30-254 BPM	18-300 BPM
SPO2 Range	0 to 100%	0 to 100%
Alarm Range	High and Low Settings	No Alarms
Operating Temperature Range	-4 to 131 degrees F	-4 to 122 degrees F
Storage Temperature Range	-40 to 167 degrees F	-22 to 122 degrees F
Operating Humidity Range	15-95% RH (non-condensing)	10-90% RH (non-condensing)
Storage Humidity Range	10-95% RH (non-condensing)	10-95% RH (non-condensing)
Power Requirements	105-125 VAC, 60 Hz	120 VAC, 60 Hz
		207-253 VAC, 50 Hz (optional)
		90-112 VAC, 50 Hz (optional)

Recommendation: Taking into account the intended use of the pulse oximeters in a field setting, the slight differences do not preclude the use of the PalmSAT 2500 in place of the BCI 3303. These two units are interchangeable with each other.

Need for a laboratory-grade refrigerator for storing ISTAT reagents.

There was an urgent need to identify a lab refrigerator in which to store reagents for the ISTAT portable clinical analyzer. The temperature range required was between 2 and 8 degrees centigrade. A capacity of approximately 6 cubic feet of storage space was also required. A number of makes and models were explored, including looking at the availability of existing refrigerators with a national stock number already assigned. Several models looked at with an NSN assigned could meet the temperature range but they also came with a freezer box, which would lower the available capacity and also have the potential of freezing the reagent cartridges if the cartridges were stored too close to the freezer portion. The manufacturer of the reagents mentioned freezing would ruin the reagents so it would be imperative to keep the reagents away from freezing temperatures. There was a potential suitable refrigerator that already had an NSN assigned but the manufacturer could not meet the delivery schedule the Army required. The refrigerator ordered was the So-Low Model MV4-6UCR. It has a 6.1 cubic foot capacity with a 1 to 7 degree Celsius range. Dimensions of the refrigerator are 24" Wide x 24" Deep x 34" High. The refrigerators have a GSA price of \$975 each and runs on 115 volts AC at 60 Hertz. The NSN for this unit is 4110-01-234-8154.



Fig 7. Laboratory Refrigerator

Table 4. Characteristics for So-Low Laboratory Refrigerator

Specifications	Model MV4-6UCR
Capacity	6.1 Cubic Feet/173 liters
Temperature Range	1 to 7 degrees Celsius
Dimensions	23 7/8" x 24" x 34"
Manual Defrost	
Forced Air Ventilation Through Front Grille	
No Additional Ventilation Clearance Required to Build in Under Counter	
R134A Refrigeration System	
3 In-Door Shelves	
115 Volt, 60 Hz, 1 Phase	
3.3 Amps	

Test, Measurement, and Diagnostic Equipment (TMDE)

The ongoing review of the Army's MTOE medical TMDE-SP requirements included the following items. These items augment the items identified in the December 2002 issue. A consolidated listing of all TMDE requirements and the inventory levels at each type organization will follow in next month issue.

1. The Fluke Biomedical, 215, Medical Function Simulator, NSN 6625012983830, LIN: S56720 is a portable; self-contained, battery operated, ECG, blood pressure, respiration, and temperature simulator, w/protective case; used to test physiological monitoring equipment and trouble shooting when required; operational utilizing a nominal 9 volt standard alkaline battery (not supplied) w/low voltage indicator; cube 0.12 cubic feet, weight 2.00 pounds.



Fig. 8. Fluke Model 215
Medical Function Simulator

2. The Fluke Biomedical, 232M, Current Leakage Tester, NSN 6625011428233, LIN: T61791 is a Tester, current leakage, medical equipment auto ranging type, up ranges at 1999 counts, down ranges at 180 counts, meter with 3-1/2 digit led readout, operates on 115 or 230 volt, 50/60 Hz power, w/ carrying case



Fig. 9. Fluke Model
232M Current Leakage
Tester

3. The Fluke Biomedical, Impulse 4000, Defib/Ekg Analyzer, NSN 6515014491420, LIN: A83433 is a battery-operated analyzer that measures defibrillator energy outputs between 50 to 1000 joules with an accuracy of +/- 2%. It offers a load resistance of 50 ohms; transcutaneous pacing testing; 12-lead ekg simulation; interactive training capabilities; four line display; defibrillator training manikin interface. It, includes TQA-9 PhysioControl transcutaneous pacer, plug in test module and transcutaneous, pacer only, adapters.



Fig. 10. Fluke Impulse
4000 Defib/Ekg Analyzer

4. The Fluke Biomedical, CUFFLINK, NIBP Analyzer, NSN 6515014491423, LIN: Z07763 is a self contained automatic test device capable of testing the blood pressure functions of physiological monitoring equipment. Capable of testing adult, infant, and neonatal waveforms covering the full spectrum of normal, hypertensive, and hypotensive blood pressures and heart rates. It can be used to generate normal, bradycardia, and tachycardia rhythm selections. It can define up to five automated test sequences with a variety of heart rates and repeat cycle parameters. In addition to the above, capabilities can include manometer, leak test, and pop off pressure tests.



Fig. 11. Fluke NIBP Analyzer

5. The Fluke Biomedical, IPT-1, Infusion Pump Tester, NSN 6515014492331, LIN: Z27500 is a single channel infusion pump tester capable of testing a variety of steady flow and non-steady flow infusion devices. It allows measurement of flow rates ranging from .5ml/hr to 1000 ml/hr. It's tests include volume, flow (from 1ml/hr to 1000 ml/hr) and occlusion (500-1780 mm hg). It also has rs-232 and printer ports, and is capable of operating on 110 or 220 VAC, 50/60 Hz.



Fig. 12. Fluke Infusion Pump Tester

6. The Michigan Instruments, Pneuvue3600i, Ventilator Tester, NSN 6515014491421, LIN: Z28075 is a portable test lung system designed to test ventilator operation. It is capable of measuring the following ventilator functions: breath rate, inspiratory and expiratory time, i.e. ratio, tidal volume, peak and average inspiratory flow rate, peak pressure - proximal, intra-lung, mean airway pressure and baseline pressure. It is also capable of operating on 110 or 220 VAC, 50/60 Hz., includes pneuvue software, lung simulator, and integral carrying case.



Fig. 13. Michigan Instruments Ventilator Tester

7. The Tektronix, THS720P, Digital Oscilloscope, NSN 6625014489577, LIN: Z47763 is an isolated channel, 100 mHz bandwidth, and 500 ms/s digital real-time oscilloscope with true rms digital multimeter. The oscilloscope and meter modes can operate simultaneously and independently on the same or different signals. It is capable of providing electric/power measurements of and verifying correct operation of motors, power supply efficiency, and transformer efficiency. It includes two 10x high-voltage passive probes, user manual, quick reference manual, standard meter lead set, Nicad rechargeable battery pack, AC power adapter, soft carrying case, cable and adapters for RS-232, NIST-traceable certificate of calibration, current probes for scope operation, and current probes for DMM operation.



Fig. 14. Tektronix Digital Oscilloscope

8. The Riken, 1802d, Anesthetic Gas Indicator, NSN 6630014876987, LIN: TBD is a compact, hand-held, portable, optical interferometer. Used for calibrating and testing anesthetic vaporizers; measures anesthetic vapor concentrations for desflurane, halothane, enflurane, isoflurane, sevoflurane, ether, methoxyflurane, trichloroethylene, chloroform, nitrous oxide, cyclopropane, carbon dioxide. Measurement accuracy $\pm 3\%$. Ambient temperature: 0-40 degrees Celsius. Utilizes hand aspirator bulb gas sampling method. Requires one "D" size dry cell.



Fig. 15. Riken Anesthetic Gas Indicator

9. The Fluke, 51, Thermometer, NSN 6685012927873 is a 50 series II contact thermometer that offers fast response and laboratory accuracy ($0.05\% + 0.3^{\circ}\text{C}$) in a rugged, handheld test tool. It features: large backlit dual display plus minimum, maximum, or average, relative time clock on minimum, maximum, and average and provides a time reference for major events. Electronic offset function allows compensation of thermocouple errors to maximize overall accuracy, measures j, k, t, and e-types of thermocouples, readout in $^{\circ}\text{C}$, $^{\circ}\text{F}$, or Kelvin (K), splash and dust resistant case protected by impact absorbing holster, user-friendly front panel is easy to set up and operate, sleep mode increases battery life; typical 1000-hour battery life, battery door allows easy battery replacement without breaking the calibration seal, optional toolpak accessory allows the thermometer to hang from any metal object (with the rare earth magnet) or secure around a pipe (with hook-and-loop straps) for hands-free operation. 3 year warranty



Fig. 16. Fluke Model 51 Digital Thermometer

Appendix A

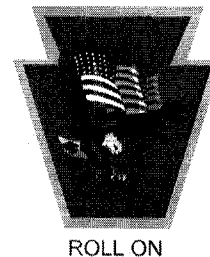
Appendix A

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REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
HEADQUARTERS, 28TH INFANTRY DIVISION (MECHANIZED)
MULTINATIONAL DIVISION (NORTH)
TUZLA, BOSNIA-HERZEGOVINA
APO AE, 09789



AFZP-TFE-TFME-LAB

31 December 2002

MEMORANDUM FOR DEPUTY COMMANDER FOR CLINICAL SERVICES

SUBJECT: Equipment Acquisition for Task Force Medical Eagle

1. Task Force Medical Eagle has determined that additional equipment is required to support its medical mission in Bosnia-Herzegovina.
2. Identification and justification of the equipment is as follows:
 - a. **Laboratory Freezer** TFME Laboratory Services requires this item to properly store Vitros 250 slides, reagents, and most importantly Fresh Frozen Plasma. The Vitros 250 Chemistry Analyzer is our primary chemistry analyzer. The reagents and calibrators must be stored between 0 and negative 18 degrees Celsius and the Fresh Frozen Plasma must be stored at negative 18 degrees Celsius or colder. Ideally, we need either a freezer that can provide two different temperature compartments or two smaller freezers that can each provide the necessary temperature. They both must be reasonably space efficient.
 - b. The request for these freezers is urgent due to the fact that our current ultra-low freezer (less than negative 18 degrees) is down again. It has failed us several times, which resulted in irreplaceable FFP. Freezer parts including the compressors and filters have been replaced, including routine regular maintenance. Our backup ultra-low freezer is an emergency temporary back up replacement for the ultra-low freezer. Since we have previously purchased a backup Vitros 250, our 0 to negative 18-degree freezer space is now limited. We now have twice as many supplies and not enough freezer space.
3. Point of contact for this memorandum is SSG Szemkus, Task Force Medical Eagle Laboratory NCOIC, at DSN: 762-0435.

MAJ Southerland
Laboratory OIC

SSG Szemkus
Laboratory NCOIC

Appendix B

Appendix B

This is a proprietary document of McAdams Technologies, Inc., Information Systems Support Inc., and USAMMA, and is not to be shared with other contractors or consultants.

STERIS®



January 22, 2003

To Whom it May Concern,

The Proof® Biological Incubators, part number NA127 & NA053, are obsolete and no longer sold and serviced by STERIS Corporation. The Verify® product line has replaced these incubators. The Verify® Incubator is part number S3080, and is a dual temperature, 28-vial incubator.

Regards,

Thomas F. McCrone – STERIS Corporation

Sample Data Collection Monthly Report February 2003



**Submitted to:
U.S. Army Medical Materiel Agency
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland**



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Introduction: The U.S. Army Medical Material Agency (USAMMA) serves as the Army Medical Department's (AMEDD) strategic level medical logistics organization. USAMMA's mission is to enhance the medical material readiness throughout the full range of military health service support missions worldwide. In this role USAMMA develops and implements innovative logistics concepts and technologies as well as promoting military and medical logistics information and knowledge.

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Scope: This document, the thirteenth Sample Data Collection (SDC) report, includes information gathered for making Impact Instrumentation's Uni-vent 750 volume ventilator, currently in depot storage, complete and usable should they need to be fielded. Also included in the technology support section is the breakdown of a list of older medical equipment items in medical units of the 44th MEDCOM that have either reached or exceeded their life expectancy. Also included are the results of an in-depth review of Test, Measurement, and Diagnostic Equipment (TMDE) items. The list shows various units responsible for maintaining medical assets, what the current TMDE requirements are and what the proposed level of equipment should be based on the review of the current needs.

Technology Support Issues

The following equipment and technology issues were addressed during February.

IMPACT Instrumentation Uni-vent 750 Portable Critical Care Volume Ventilator 6530-01-327-0686

Should the need for critical care volume ventilators exceed the current supply of ventilators deployed in the field, a decision was made to look into the feasibility of using the Uni-vent Model 750M ventilators currently stored in several depots. The units were assessed to determine what was needed to make a complete and usable system. Table 1 is a listing of all the parts and accessories required. Figure 1 shows a unit set up with air and oxygen hoses connected to the air-oxygen blender (see figure 2) and the reusable patient breathing circuit supplied with each ventilator when purchased new. Current healthcare practices include using single-patient use disposable breathing circuits rather than the reusable patient hoses and would require the purchase of an adapter for each ventilator. Each ventilator would also require a compressed air and oxygen source for operation. Each compressor can be configured to operate two ventilators with the use of a manifold kit. The oxygen source is likely to be compressed oxygen in either H- or D-size cylinders, which would require an oxygen regulator to reduce the pressure of the cylinders to 50 psi at a flow rate of up to 100 liters per minute.



Fig. 1. Impact Uni-vent 750M assembled



Fig. 2. Air-O2 blender (side view)

The depots have a current inventory of 247 ventilators available. Along with the ventilators, there is an adequate supply of air-oxygen blenders for each. Without the blenders, the ventilators could be run directly from a compressed oxygen source but if bottled oxygen is used instead of a central liquid oxygen supply, the oxygen supply could be used up quickly. There are also 153 dental compressor-dehydrators available in depot to supply medical grade compressed air to the ventilators, which is adequate for the number of available ventilators. After assessing what is available through the depots, the following items would need to be procured to make the ventilators complete and usable:

1. 247 Interface Adapters (Enables the 750 to use single-use patient circuits)
2. 125 Circuits, single use (15 per case)
3. 125 Filters (Heat, moisture exchanger)(24 per case)
4. 247 Oxygen Regulators (CGA 540 connection)
5. 247 Yoke adapters (CGA 870 connector with CGA 540 male)

The yoke adapters will allow for the purchase of oxygen pressure regulators that connect to H-size cylinders (CGA 540 connection) but with the added ability to interface with D and E size cylinders (CGA 870 connection). Without knowing what the source of the oxygen will be, two separate regulators, one for CGA 540 and one for CGA 870 connections will need to be purchased if the yokes weren't procured.

Table 1. Required accessories and consumables for Uni-vent 750 ventilators

Requirement	NSN	Vendor	Part #	Price	Sets
External Dental Compressor (one compressor for every two vents)	6520-01-398-4613 or 6520-00-139-1246	Defiance Electronics	PAC 6.7	\$2850	Currently in OR, EMT, ICU and Dental Sets. Enough in depot to meet the requirement.
Interface Adapter so the 750 can use single-use patient circuits	NA	Impact Instrumentation	820-0062-00	\$85.50	Not in any set, needs to be purchased
Blender, Air-Oxygen	6530-01-319-4044	Bird	03804	\$905	Only in old EMT and ICU sets (H series). Enough in depot to meet the requirement.
Disposable Circuit	6515-01-470-4215	Allegiance	003764	\$50.37	Same as 754M (not in FST)
Filter, Bacterial/Viral	6515-01-504-5417	Allegiance	003005	\$76.57 per case of 25	New item not in any set. Needs to be purchased
Repair parts kit manifold to connect ventilator to dental compressor-dehydrator	6545-01-347-5904	Unique kits put together by the depot for the 750 ventilators	NA	NA	Hill Depot has 125 manifold kits on hand to meet the requirement.
Coupling Assembly, DISS Female Oxygen to DISS Female Oxygen	4730-01-381-0527	Mercury Medical	69-201-78	\$7.27	Depots have enough on-hand for the requirement
Coupling Assembly, DISS Male Oxygen to DISS Male Oxygen	4730-01-381-0104	Mercury Medical	69-201-75	\$2.21	Depots have enough on-hand for the requirement
Yoke Adapter (D & E Cylinder yoke with CGA 540 male threads)	8120-00-550-8484	The BOC Group	7800	\$34.03	No longer available from the BOC Group. SAP shows 744 on-hand at various locations BUT assigned to MISSION. Mercury Medical still sells them.
Regulator, Oxygen CGA 540 Connection	6680-01-505-1310	Allied Healthcare	L280-220	\$187.95	Needs to be purchased



Fig. 3. Manifold kit components



Fig. 4. Air-O2 blender (Front View)

Review of 44th MEDCOM Equipment At or Exceeding Life Expectancy

44th MEDCOM submitted a list of equipment items (56 separate National Stock Numbers) in their inventories that have either reached or exceeded their life expectancy. Life expectancy of equipment is a subjective number assigned to equipment so a review of its effectiveness and adequacy can be accomplished at various stages of use. It doesn't mean the equipment must be replaced when it reaches its life expectancy but this is a good time to see if the equipment is still considered current or obsolete and whether or not its manufacturer still supports it by way of maintenance, parts, or accessories. Also, heavily used equipment may be worn out well before it reaches its expected life. Equipment in field assemblages may not have the same hours of usage as equipment being used in fixed facilities so, if properly maintained, may have a useful life well after its counterpart in hospitals have to be replaced.

Inquiries were made for each item on the equipment list to determine currency. Manufacturers were contacted to check the status of the equipment. The spreadsheet at Appendix B shows the results. The following stock numbers are divided into three sections, items that are still current and available, items that have replacements identified, and items that are obsolete, discontinued, and no replacements are identified:

The following items have been identified as still current and available:

1. 3540-00-457-2706, Sealing Machine
2. 6515-00-323-4510, Cast Cutter
3. 6515-01-379-7852, Cutter Vacuum
4. 6525-01-230-0603, X-ray Illuminator
5. 6525-01-325-3740, Portable X-Ray Apparatus
6. 6530-00-711-3000, Heating Pad Heater
7. 6540-00-299-8108, Edger, Hand Ophthalmic Lens
8. 6650-00-933-3218, Refractometer
9. 6630-01-344-9996, Coagulation Timer
10. 6640-00-145-1180, Laboratory Centrifuge
11. 6640-00-765-0621, Electric Water Bath

The following items were found to have a replacement identified:

1. 4110-01-117-3902, Mechanical Blood Refrigerator, interchangeable with 4110-01-422-6809
2. 4110-01-287-7111, 1 Cubic Foot Capacity Refrigerator, replaced by 4110-01-451-2356
3. 4110-01-291-7046, Refrigerator, replaced by 4110-01-425-8009
4. 6515-01-174-2406, Lifepak 5 Defibrillator, replaced by 6515-01-453-4003
5. 6515-01-242-9123, Suction Apparatus, replaced by 6515-01-435-0050
6. 6515-01-284-8704, Suction Apparatus, replaced by 6515-01-435-4257
7. 6515-01-287-0607, Pneumatic Tourniquet System, replaced by ATS 2000, same NSN 6515-01-287-0607
8. 6515-01-291-1198, EKG Monitor replaced by NSN 6515-01-432-2707
9. 6515-01-291-1199, Defibrillator/Monitor replaced by NSN 6515-01-453-4003
10. 6515-01-293-5577, Pulse Oximeter replaced by NSN 6515-01-452-7697
11. 6515-01-304-6497, Suction Apparatus replaced by NSN 6515-01-435-0050
12. 6515-01-305-1157, Defibrillator/Monitor replaced by NSN 6515-01-453-4003
13. 6515-01-310-1687, Cardiac Pacemaker replaced by NSN 6515-01-491-4633
14. 6515-01-315-6197, Patient Vital Signs Monitor replaced by NSN 6515-01-432-2707
15. 6515-01-345-9440, Defibrillator/Monitor replaced by NSN 6515-01-453-4003
16. 6515-01-418-2346, Patient Vital Signs Monitor replaced by NSN 6515-01-432-2707
17. 6515-01-423-5796, Patient Vital Signs Monitor replaced by NSN 6515-01-432-2711
18. 6515-01-423-5872, Patient Vital Signs Monitor replaced by NSN 6515-01-432-2707
19. 6515-01-423-5877, Patient Vital Signs Monitor replaced by NSN 6515-01-432-2707
20. 6520-00-000-0158, Dental Light Set replaced by NSN 6520-01-446-4170
21. 6520-00-139-1246, M5B Dental Compressor-Dehydrator replaced by PAC 6.7 under same NSN
22. 6520-00-181-7349, Dental Chair and Stool Unit replaced by NSN 6520-01-446-3783
23. 6520-01-272-4531, Dental Operating & Treatment Unit replaced by NSN 6520-01-456-7170
24. 6525-00-420-9588, X-Ray Processor replaced by NSN 6525-01-477-8734
25. 6525-01-099-2320, Dental X-Ray Field Apparatus replaced by NSN 6525-01-425-5216
26. 6530-01-324-4514, Portable Ventilator replaced by NSN 6530-01-455-1653
27. 6545-01-117-3894, Surgical Scrub Sink replaced by Ran-Paige NSN 6530-01-429-6715
28. 6630-01-298-7060, Sodium/Potassium Analyzer-Function replaced by iSTAT NSN 6630-01-411-2405
29. 6630-01-300-8711, Sodium/Potassium Analyzer-Function replaced by iSTAT NSN 6630-01-411-2405
30. 6630-01-344-4058, GemStat Blood Gas Analyzer-Function replaced by iSTAT NSN 6630-01-411-2405

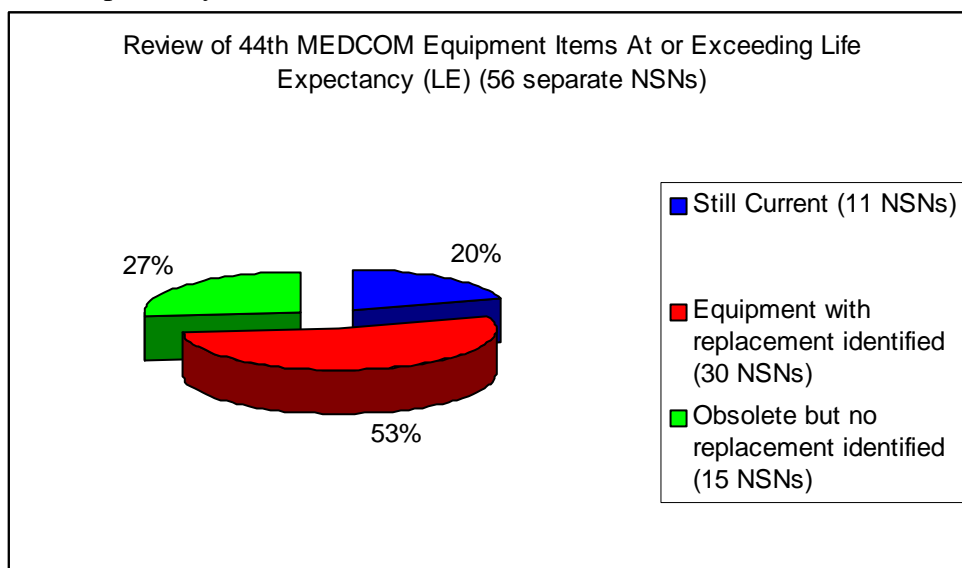
The following items are deleted, obsolete, no longer available and have no replacement identified:

1. 4110-01-320-1699, Mechanical Blood Freezer
2. 4110-01-373-0032, Ice Machine
3. 4430-01-060-9235, Oven
4. 6515-00-782-2625, Suction Pressure Apparatus
5. 6515-01-240-6883, Blood Recovery/Delivery Apparatus
6. 6515-01-259-4307, Suction Drainage Unit
7. 6515-01-290-8949, Head-Mounted Light Source
8. 6515-01-313-6242, Clinical Thermometer
9. 6515-01-378-4529, Ultrasonic Stimulator
10. 6525-00-823-8144, X-Ray Film Processing Machine
11. 6525-01-303-6235, X-Ray Film Processing Machine
12. 6530-00-937-2204, Field Surgical Light

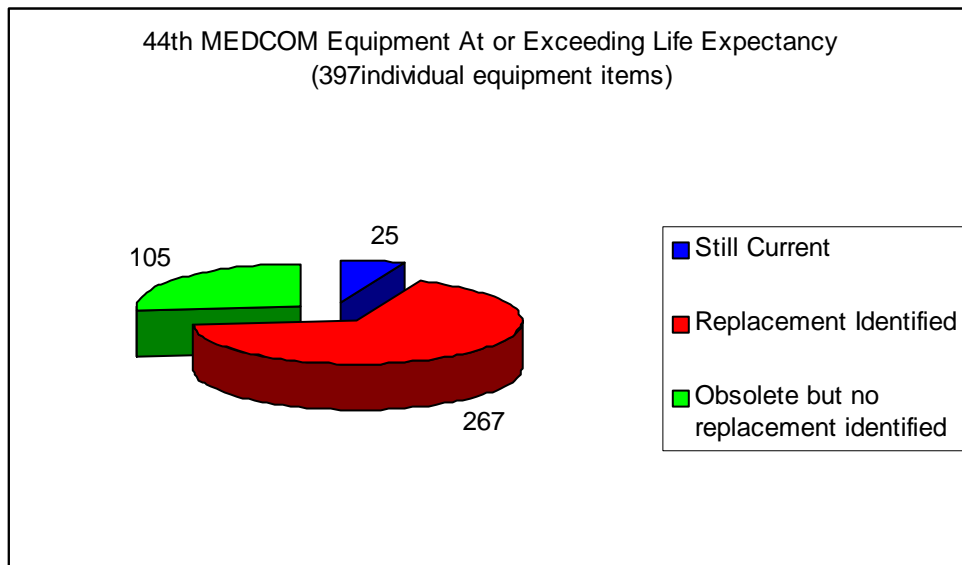
13. 6530-01-314-1228, Surgical Irrigator
14. 6540-00-299-8134, Lens Measuring Instrument
15. 6640-00-930-9034, Laboratory Centrifuge

Chart 1 shows the percentage breakdown of the 56 separate national stock numbers (NSNs) where the equipment in inventory was either at or exceeded the Life Expectancy (LE). This was not an evaluation of the actual condition of the equipment but rather was a review of what was currently in their inventory compared with current technology to see if something more modern equipment is available. There was a total of 397 pieces of equipment listed on the inventory (representing 56 NSNs).

Chart 1. Review of 44th MEDCOM Equipment Items At or Exceeding Life Expectancy (LE)



Out of the 379 pieces of equipment either at or exceeding its life expectancy, 25 items were still current and available through their manufacturer, 267 items, although still being used, have replacement equipment identified, and 105 items are obsolete but don't have a replacement identified. Chart 2 shows this breakdown.

Chart 2. 44th MEDCOM Equipment At or Exceeding Life Expectancy

Recommendation: Items identified as obsolete without a replacement need to be further investigated to determine if a replacement is required and suggest possible alternatives. Items that have been identified with a replacement need to be assessed to determine why the old equipment is still in the inventory (were new items not procured or were old items retained instead of being turned in when new equipment arrived).

MEOD Issues

The following maintenance issues were addressed during February.

Test, Measurement, and Diagnostic Equipment (TMDE)

1. A review of medical Tables of Organizations Equipment (TOEs) revealed that there are significant discrepancies concerning the requirements for Test, Measurement, and Diagnostic Equipment (TMDE).

a. There are numerous organizations that require medical equipment repairers (MER) (Military Occupation Specialty (MOS) 91A) that are lacking the TMDE requirements that enable the MER to perform their maintenance mission.

b. There are also numerous items of TMDE still showing a requirement that have been replaced by another item that has been included as a requirement or has been determined to be obsolete or no longer required to service the current state of the art medical equipment.

2. The table in Appendix A depicts the Operational TOE (OTOE) requirements as identified by the United States Army Force Management Support Agency (USAFMSA) Requirements Documentation System (RDS). The OTOE column reflects the quantities listed by the Department of the Army as required for the unit to employ an effective Unit/Direct Support medical equipment maintenance program. The proposed changes as suggested by the National Maintenance Point (NMP) are reflected in the “props’d” column. The quantities are the quantities that are anticipated to be fed into the Basis of Issue Plan (BOIP) thus updating the Requirements Documentation System.

3. The data gathered from review of the requirements documents, if efficiently used, will enhance the equipment readiness and mission completion capability of medical TOE units. Failure to properly equip our medical equipment maintainers inhibits the MER’s and the Unit’s ability to perform at an optimal level.

UNIT SRC	DESCRIPTION	X-Ray Calibration & Verification System		Calibrator Timer		Counter, Elect-Dig		Calibrator Generator ECG	
		C05856		C14589		C19266		C61455	
		OTOE	props'd	OTOE	props'd	OTOE	props'd	OTOE	props'd
08057L000	Medical Co (MSB) HVY Div	0	1	0	0	0	0	1	0
08058L100	Medical Company, FSB, HVY DIV	0	1	0	0	0	0	1	0
08058L200	Medical Company, FSB, HVY DIV	0	1	0	0	0	0	1	0
08108F300	Med Co, Brigade Spt Bn	0	1	0	0	0	0	0	0
08158F000	Med Co, FWD SPT BN (XXI)	0	1	0	0	0	0	0	0
08257F000	MED CO, DIV SPT BN (XXI)	0	1	0	0	0	0	1	0
08267L000	MED CO, DIV SPT BN ABN (XXI)	0	1	0	0	0	0	1	0
08268L000	MED CO FSB, ABN	0	1	0	0	0	0	0	0
08277L000	MEDICAL CO, MSB, AASLT DIV	0	1	0	0	0	0	1	0
08278L000	Medical Company, FSB, AASLT DIV	0	1	0	0	0	0	0	0
08297L000	MED CO, MSB, LID	0	1	0	0	0	0	1	0
08298L000	MED CO, FSB, LID	0	1	0	0	0	0	1	0
08437L000	MED CO, HVY SEP BDE (HSB)	0	1	0	0	0	0	1	0
08438L000	MED CO, SEP INF BDE (SIB)	0	1	0	0	0	0	1	0
08438L100	MED CO, SEP INF BDE (SIB)	0	1	0	0	0	0	1	0
08456A000	HHD, AREA SUPPORT MED BN	0	1	0	0	0	0	0	0
08456L000	HQS & SPT CO (ASB)	0	1	0	0	0	0	1	0
08473A000	DENTAL COMPANY (AREA SPT)	0	1	0	0	0	0	0	0
08476L000	HHD, MED BN (DEN SVC)	0	1	0	0	0	0	0	0
08477L000	MED CO, SPT SQDN, ACR	0	1	0	0	0	0	1	0
08478L000	MED CO, DENTAL SVCS	0	1	0	0	0	0	0	0
08485L000	MEDICAL BN, LOGISTIC(FWD)	4	6	5	0	4	0	4	0
08487L000	LOG SPT CO, MED BN, LOG (FWD)	4	3	3	0	2	0	2	0
08488L000	DISTRIBUTION COMPANY	0	3	2	0	2	0	2	0
08488A000	MEDICAL LOGISTICS COMPANY	2	4	0	0	0	0	0	0
08489L000	MED TROOP, SPT SQDN, ACR	0	1	0	0	0	0	1	0
08496A000	HHD, MEDICAL LOGISTICS BN	0	0	0	0	0	0	0	0
08497A000	LOGISTICS SUPPORT COMPANY	2	4	3	0	2	0	2	0
08527AA00	HOSP AUG TM, HEAD & NECK	0	1	0	0	0	0	0	0
08657L000	THEATER ARMY MEDICAL LAB	0	0	0	0	1	0	0	0
08695L000	MEDLOG BN (REAR)	4	7	8	0	6	0	6	0
08697L000	LOG SPT CO, MED BN, LOG (REAR)	4	4	6	0	4	0	4	0
08698L000	DISTRIBUTION CO, LOG (REAR)	0	3	2	0	2	0	2	0
08705L000	COMBAT SUPPORT HOSPITAL	1	1	1	0	1	0	0	0
08715L000	FIELD HOSPITAL	3	1	1	0	1	0	1	0
08725L000	GENERAL HOSPITAL	3	1	1	0	1	0	0	0
08858A000	HOSP CO, 84 BED, NSB	3	1	1	0	1	0	1	0
08863L000	MOBILE ARMY SURGICAL HOSP	1	1	1	0	1	0	1	0
08955A000	COMBAT SUPPORT HOSPITAL CORPS	2	2	2	0	2	0	2	0
08957A000	HOSP CO, 164 BED, CORPS	1	1	1	0	1	0	1	0
08958A000	HOSP CO, 84 BED, CORPS	1	1	1	0	1	0	1	0
31706L000	HQ & MAIN SPT CO, SOSB (ABN)	0	0	0	0	0	0	0	0
63906L000	HQ & MAIN SPT CO, SOSB (ABN)	0	0	0	0	0	0	0	0
63907L000	FORWARD SPT CO (ABN) SETAF	0	0	0	0	0	0	0	0

UNIT SRC	DESCRIPTION	Calibrator Analyzer		Cassette XRay Calibration Test		Densitometer 9V Battery Portable		Meter Foot Candle	
		C61523		C74198		D94348		M38443	
		OTOE	props'd	OTOE	props'd	OTOE	props'd	OTOE	props'd
08057L000	Medical Co (MSB) HVY Div	0	1	0	0	0	0	0	0
08058L100	Medical Company, FSB, HVY DIV	0	1	0	0	0	0	0	0
08058L200	Medical Company, FSB, HVY DIV	0	1	0	0	0	0	0	0
08108F300	Med Co, Brigade Spt Bn	0	1	0	0	0	0	0	0
08158F000	Med Co, FWD SPT BN (XXI)	0	1	0	0	0	0	0	0
08257F000	MED CO, DIV SPT BN (XXI)	0	1	0	0	0	0	0	0
08267L000	MED CO, DIV SPT BN ABN (XXI)	0	1	0	0	0	0	0	0
08268L000	MED CO FSB, ABN	0	1	0	0	0	0	0	0
08277L000	MEDICAL CO, MSB, AASLT DIV	0	1	0	0	0	0	0	0
08278L000	Medical Company, FSB, AASLT DIV	0	1	0	0	0	0	0	0
08297L000	MED CO, MSB, LID	0	1	0	0	0	0	0	0
08298L000	MED CO, FSB, LID	0	1	0	0	0	0	0	0
08437L000	MED CO, HVY SEP BDE (HSB)	0	1	0	0	0	0	0	0
08438L000	MED CO, SEP INF BDE (SIB)	0	1	0	0	0	0	0	0
08438L100	MED CO, SEP INF BDE (SIB)	0	1	0	0	0	0	0	0
08456A000	HHD, AREA SUPPORT MED BN	0	1	0	0	0	0	0	0
08456L000	HQS & SPT CO (ASB)	0	1	0	0	0	0	0	0
08473A000	DENTAL COMPANY (AREA SPT)	0	0	0	0	0	0	0	0
08476L000	HHD, MED BN (DEN SVC)	0	0	0	0	0	0	0	0
08477L000	MED CO, SPT SQDN, ACR	0	1	0	0	0	0	0	0
08478L000	MED CO, DENTAL SVCS	0	0	0	0	0	0	0	0
08485L000	MEDICAL BN, LOGISTIC(FWD)	6	6	6	0	5	0	5	0
08487L000	LOG SPT CO, MED BN, LOG (FWD)	4	3	4	0	3	0	3	0
08488L000	DISTRIBUTION COMPANY	2	3	2	0	2	0	2	0
08488A000	MEDICAL LOGISTICS COMPANY	1	4	0	0	0	0	0	0
08489L000	MED TROOP, SPT SQDN, ACR	0	1	0	0	0	0	0	0
08496A000	HHD, MEDICAL LOGISTICS BN	0	0	0	0	0	0	0	0
08497A000	LOGISTICS SUPPORT COMPANY	4	4	4	0	3	0	3	0
08527AA00	HOSP AUG TM, HEAD & NECK	0	0	0	0	0	0	0	0
08657L000	THEATER ARMY MEDICAL LAB	0	0	0	0	0	0	0	0
08695L000	MEDLOG BN (REAR)	10	7	0	0	8	0	0	0
08697L000	LOG SPT CO, MED BN, LOG (REAR)	8	4	0	0	6	0	0	0
08698L000	DISTRIBUTION CO, LOG (REAR)	2	3	0	0	2	0	0	0
08705L000	COMBAT SUPPORT HOSPITAL	1	1	1	0	1	0	1	0
08715L000	FIELD HOSPITAL	3	1	1	0	1	0	3	0
08725L000	GENERAL HOSPITAL	1	1	1	0	1	0	1	0
08858A000	HOSP CO, 84 BED, NSB	1	1	1	0	1	0	1	0
08863L000	MOBILE ARMY SURGICAL HOSP	1	1	1	0	1	0	1	0
08955A000	COMBAT SUPPORT HOSPITAL CORPS	2	2	2	0	2	0	2	0
08957A000	HOSP CO, 164 BED, CORPS	1	1	1	0	1	0	1	0
08958A000	HOSP CO, 84 BED, CORPS	1	1	1	0	1	0	1	0
31706L000	HQ & MAIN SPT CO, SOSB (ABN)	0	0	0	0	0	0	0	0
63906L000	HQ & MAIN SPT CO, SOSB (ABN)	0	0	0	0	0	0	0	0
63907L000	FORWARD SPT CO (ABN) SETAF	0	0	0	0	0	0	0	0

UNIT SRC	DESCRIPTION	Multimeter		DMM, Hand Held		Radiometer Ultrasound Therapy		Signal Generator	
		M23954		M60449		R95994		S48323	
		OTOE	props'd	OTOE	props'd	OTOE	props'd	OTOE	props'd
08057L000	Medical Co (MSB) HVY Div	1	1	4	1	0	0	0	0
08058L100	Medical Company, FSB, HVY DIV	1	1	3	1	0	0	0	0
08058L200	Medical Company, FSB, HVY DIV	1	1	2	1	0	0	0	0
08108F300	Med Co, Brigade Spt Bn	1	1	1	1	0	0	0	0
08158F000	Med Co, FWD SPT BN (XXI)	1	1	1	1	0	0	0	0
08257F000	MED CO, DIV SPT BN (XXI)	1	1	2	2	0	0	0	0
08267L000	MED CO, DIV SPT BN ABN (XXI)	1	1	4	1	0	0	0	0
08268L000	MED CO FSB, ABN	0	1	1	1	0	0	0	0
08277L000	MEDICAL CO, MSB, AASLT DIV	1	1	5	1	0	0	0	0
08278L000	Medical Company, FSB, AASLT DIV	0	1	0	1	0	0	0	0
08297L000	MED CO, MSB, LID	1	1	1	1	0	0	0	0
08298L000	MED CO, FSB, LID	1	1	1	1	0	0	0	0
08437L000	MED CO, HVY SEP BDE (HSB)	1	1	7	1	0	0	0	0
08438L000	MED CO, SEP INF BDE (SIB)	1	1	1	1	0	0	0	0
08438L100	MED CO, SEP INF BDE (SIB)	1	1	1	1	0	0	0	0
08456A000	HHD, AREA SUPPORT MED BN	0	1	4	2	0	0	0	0
08456L000	HQS & SPT CO (ASB)	2	2	3	1	0	0	0	0
08473A000	DENTAL COMPANY (AREA SPT)	1	1	4	1	0	0	0	0
08476L000	HHD, MED BN (DEN SVC)	0	1	1	1	0	0	0	0
08477L000	MED CO, SPT SQDN, ACR	1	1	3	1	0	0	0	0
08478L000	MED CO, DENTAL SVCS	1	1	1	2	0	0	0	0
08485L000	MEDICAL BN, LOGISTIC(FWD)	9	9	34	33	4	4	5	0
08487L000	LOG SPT CO, MED BN, LOG (FWD)	5	5	14	13	2	2	3	0
08488L000	DISTRIBUTION COMPANY	4	4	20	20	2	2	2	0
08488A000	MEDICAL LOGISTICS COMPANY	4	4	27	22	1	2	0	0
08489L000	MED TROOP, SPT SQDN, ACR	1	1	2	1	0	0	0	0
08496A000	HHD, MEDICAL LOGISTICS BN	0	0	4		0	0	0	0
08497A000	LOGISTICS SUPPORT COMPANY	0	0	33	34	2	2	0	0
08527AA00	HOSP AUG TM, HEAD & NECK	0	0	0	1	0	0	0	0
08657L000	THEATER ARMY MEDICAL LAB	1	1	1	1	0	0	1	0
08695L000	MEDLOG BN (REAR)	14	0	37	42	6	4	4	0
08697L000	LOG SPT CO, MED BN, LOG (REAR)	6	6	19	20	4	2	2	0
08698L000	DISTRIBUTION CO, LOG (REAR)	8	6	18	18	2	2	2	0
08705L000	COMBAT SUPPORT HOSPITAL	2	2	6	6	0	1	1	0
08715L000	FIELD HOSPITAL	2	1	6	3	0	1	1	0
08725L000	GENERAL HOSPITAL	2	2	4	5	1	1	1	0
08858A000	HOSP CO, 84 BED, NSB	2	2	6	4	0	0	1	0
08863L000	MOBILE ARMY SURGICAL HOSP	1	1	3	1	0	0	1	0
08955A000	COMBAT SUPPORT HOSPITAL CORPS	4	0	4	5	0	1	1	0
08957A000	HOSP CO, 164 BED, CORPS	2	1	2	3	0	1	0	0
08958A000	HOSP CO, 84 BED, CORPS	2	1	2	2	0	0	1	0
31706L000	HQ & MAIN SPT CO, SOSB (ABN)	0	0	0	1	0	0	0	0
63906L000	HQ & MAIN SPT CO, SOSB (ABN)	0	0	0	1	0	0	0	0
63907L000	FORWARD SPT CO (ABN) SETAF	0	0	0	1	0	0	0	0

UNIT SRC	DESCRIPTION	Simulator Medical Functions		Tester Defibrillator Energy	
		S56720		T02889	
		OTOE	props'd	OTOE	props'd
08057L000	Medical Co (MSB) HVY Div	1	1	1	0
08058L100	Medical Company, FSB, HVY DIV	1	1	1	0
08058L200	Medical Company, FSB, HVY DIV	1	1	1	0
08108F300	Med Co, Brigade Spt Bn	0	1	0	0
08158F000	Med Co, FWD SPT BN (XXI)	0	1	0	0
08257F000	MED CO, DIV SPT BN (XXI)	1	1	1	0
08267L000	MED CO, DIV SPT BN ABN (XXI)	1	1	1	0
08268L000	MED CO FSB, ABN	0	1	0	0
08277L000	MEDICAL CO, MSB, AASLT DIV	1	1	1	0
08278L000	Medical Company, FSB, AASLT DIV	0	1	0	0
08297L000	MED CO, MSB, LID	1	1	1	0
08298L000	MED CO, FSB, LID	1	1	1	0
08437L000	MED CO, HVY SEP BDE (HSB)	1	1	1	0
08438L000	MED CO, SEP INF BDE (SIB)	1	1	1	0
08438L100	MED CO, SEP INF BDE (SIB)	1	1	1	0
08456A000	HHD, AREA SUPPORT MED BN	0	1	0	0
08456L000	HQS & SPT CO (ASB)	1	1	1	0
08473A000	DENTAL COMPANY (AREA SPT)	0	0	0	0
08476L000	HHD, MED BN (DEN SVC)	0	0	0	0
08477L000	MED CO, SPT SQDN, ACR	1	1	1	0
08478L000	MED CO, DENTAL SVCS	0	0	0	0
08485L000	MEDICAL BN, LOGISTIC(FWD)	6	6	4	0
08487L000	LOG SPT CO, MED BN, LOG (FWD)	4	3	2	0
08488L000	DISTRIBUTION COMPANY	2	3	2	0
08488A000	MEDICAL LOGISTICS COMPANY	2	4	0	0
08489L000	MED TROOP, SPT SQDN, ACR	1	1	1	0
08496A000	HHD, MEDICAL LOGISTICS BN	0		0	0
08497A000	LOGISTICS SUPPORT COMPANY	4	4	2	0
08527AA00	HOSP AUG TM, HEAD & NECK	0	0	0	0
08657L000	THEATER ARMY MEDICAL LAB	0	0	0	0
08695L000	MEDLOG BN (REAR)	10	7	6	0
08697L000	LOG SPT CO, MED BN, LOG (REAR)	8	4	4	0
08698L000	DISTRIBUTION CO, LOG (REAR)	2	3	2	0
08705L000	COMBAT SUPPORT HOSPITAL	1	1	0	0
08715L000	FIELD HOSPITAL	3	1	1	0
08725L000	GENERAL HOSPITAL	1	1	0	0
08858A000	HOSP CO, 84 BED, NSB	1	1	1	0
08863L000	MOBILE ARMY SURGICAL HOSP	1	1	1	0
08955A000	COMBAT SUPPORT HOSPITAL CORPS	2	2	2	0
08957A000	HOSP CO, 164 BED, CORPS	1	1	1	0
08958A000	HOSP CO, 84 BED, CORPS	1	1	1	0
31706L000	HQ & MAIN SPT CO, SOSB (ABN)	0	0	0	0
63906L000	HQ & MAIN SPT CO, SOSB (ABN)	0	0	0	0
63907L000	FORWARD SPT CO (ABN) SETAF	0	0	0	0

UNIT SRC	DESCRIPTION	Tachom Strob Centrifu		Tester curnt Leakage		Test Set Electronic		Test Set Electrosurg Apparatus	
		T07421		T61791		T77263		T90883	
		OTOE	props'd	OTOE	props'd	OTOE	props'd	OTOE	props'd
08057L000	Medical Co (MSB) HVY Div	0	1	1	1	0	0	0	1
08058L100	Medical Company, FSB, HVY DIV	0	1	1	1	0	0	0	1
08058L200	Medical Company, FSB, HVY DIV	0	1	1	1	0	0	0	1
08108F300	Med Co, Brigade Spt Bn	0	1	0	1	0	0	0	1
08158F000	Med Co, FWD SPT BN (XXI)	0	1	0	1	0	0	0	1
08257F000	MED CO, DIV SPT BN (XXI)	0	1	1	1	0	0	0	1
08267L000	MED CO, DIV SPT BN ABN (XXI)	0	1	1	1	0	0	0	1
08268L000	MED CO FSB, ABN	0	1	0	1	0	0	0	1
08277L000	MEDICAL CO, MSB, AASLT DIV	0	1	1	1	0	0	0	1
08278L000	Medical Company, FSB, AASLT DIV	0	1	0	1	0	0	0	1
08297L000	MED CO, MSB, LID	0	1	1	1	0	0	0	1
08298L000	MED CO, FSB, LID	0	1	1	1	0	0	0	1
08437L000	MED CO, HVY SEP BDE (HSB)	0	1	1	1	0	0	0	1
08438L000	MED CO, SEP INF BDE (SIB)	0	1	1	1	0	0	0	1
08438L100	MED CO, SEP INF BDE (SIB)	0	1	1	1	0	0	0	1
08456A000	HHD, AREA SUPPORT MED BN	0	1	0	1	0	0	0	1
08456L000	HQS & SPT CO (ASB)	0	1	1	1	0	0	0	1
08473A000	DENTAL COMPANY (AREA SPT)	0	0	1	1	0	0	0	0
08476L000	HHD, MED BN (DEN SVC)	0	0	1	1	0	0	0	0
08477L000	MED CO, SPT SQDN, ACR	0	1	1	1	0	0	0	1
08478L000	MED CO, DENTAL SVCS	0	0	1	1	0	0	0	0
08485L000	MEDICAL BN, LOGISTIC(FWD)	3	6	7	6	4	0	5	6
08487L000	LOG SPT CO, MED BN, LOG (FWD)	1	3	5	3	2	0	3	3
08488L000	DISTRIBUTION COMPANY	2	3	2	3	2	0	2	3
08488A000	MEDICAL LOGISTICS COMPANY	1	4	2	4	0	0	1	4
08489L000	MED TROOP, SPT SQDN, ACR	0	1	1	1	0	0	0	1
08496A000	HHD, MEDICAL LOGISTICS BN	0		0		0	0	0	
08497A000	LOGISTICS SUPPORT COMPANY	1	4	5	4	2	0	3	4
08527AA00	HOSP AUG TM, HEAD & NECK	0	0	0	1	0	0	0	0
08657L000	THEATER ARMY MEDICAL LAB	0	1	1	1	0	0	0	0
08695L000	MEDLOG BN (REAR)	4	7	6	4	6	0	8	7
08697L000	LOG SPT CO, MED BN, LOG (REAR)	2	4	4	4	4	0	6	4
08698L000	DISTRIBUTION CO, LOG (REAR)	2	3	2	4	2	0	2	3
08705L000	COMBAT SUPPORT HOSPITAL	1	1	1	1	1	0	1	1
08715L000	FIELD HOSPITAL	1	1	1	1	1	0	1	1
08725L000	GENERAL HOSPITAL	1	1	1	1	1	0	1	1
08858A000	HOSP CO, 84 BED, NSB	1	1	1	1	1	0	1	1
08863L000	MOBILE ARMY SURGICAL HOSP	1	1	1	1	1	0	1	1
08955A000	COMBAT SUPPORT HOSPITAL CORPS	2	2	2	2	2	0	2	2
08957A000	HOSP CO, 164 BED, CORPS	1	1	1	1	1	0	1	1
08958A000	HOSP CO, 84 BED, CORPS	1	1	1	1	1	0	1	1
31706L000	HQ & MAIN SPT CO, SOSB (ABN)	0	0	0	1	0	0	0	1
63906L000	HQ & MAIN SPT CO, SOSB (ABN)	0	0	0	1	0	0	0	1
63907L000	FORWARD SPT CO (ABN) SETAF	0	0	0	1	0	0	0	1

UNIT SRC	DESCRIPTION	Scope		Defib Analyzer		IV Pump Analyzer		NIBP Analyzer	
		Z47763		A83433		Z27500		Z07763	
		OTOE	props'd	OTOE	props'd	OTOE	props'd	OTOE	props'd
08057L000	Medical Co (MSB) HVY Div	0	1	0	1	0	0	0	1
08058L100	Medical Company, FSB, HVY DIV	0	1	0	1	0	0	0	1
08058L200	Medical Company, FSB, HVY DIV	0	1	0	1	0	0	0	1
08108F300	Med Co, Brigade Spt Bn	0	1	0	1	0	0	0	1
08158F000	Med Co, FWD SPT BN (XXI)	0	1	0	1	0	0	0	1
08257F000	MED CO, DIV SPT BN (XXI)	0	1	0	1	0	0	0	1
08267L000	MED CO, DIV SPT BN ABN (XXI)	0	1	0	1	0	0	0	1
08268L000	MED CO FSB, ABN	0	1	0	1	0	0	0	1
08277L000	MEDICAL CO, MSB, AASLT DIV	0	1	0	1	0	1	0	1
08278L000	Medical Company, FSB, AASLT DIV	0	1	0	1	0	0	0	1
08297L000	MED CO, MSB, LID	0	1	0	1	0	0	0	1
08298L000	MED CO, FSB, LID	0	1	0	1	0	0	0	1
08437L000	MED CO, HVY SEP BDE (HSB)	0	1	0	1	0	0	0	1
08438L000	MED CO, SEP INF BDE (SIB)	0	1	0	1	0	0	0	1
08438L100	MED CO, SEP INF BDE (SIB)	0	1	0	1	0	0	0	1
08456A000	HHD, AREA SUPPORT MED BN	0	1	0	1	0	0	0	1
08456L000	HQS & SPT CO (ASB)	0	1	0	1	0	0	0	1
08473A000	DENTAL COMPANY (AREA SPT)	0	1	0	0	0	0	0	0
08476L000	HHD, MED BN (DEN SVC)	0		0	0	0	0	0	0
08477L000	MED CO, SPT SQDN, ACR	0	1	0	1	0	0	0	1
08478L000	MED CO, DENTAL SVCS	0	1	0	0	0	0	0	0
08485L000	MEDICAL BN, LOGISTIC(FWD)	0	12	0	6	0	6	0	6
08487L000	LOG SPT CO, MED BN, LOG (FWD)	0	5	0	3	0	3	0	3
08488L000	DISTRIBUTION COMPANY	0	7	0	3	0	3	0	3
08488A000	MEDICAL LOGISTICS COMPANY	0	7	0	4	0	4	0	4
08489L000	MED TROOP, SPT SQDN, ACR	0	1	0	1	0	0	0	1
08496A000	HHD, MEDICAL LOGISTICS BN	0		0		0	0	0	
08497A000	LOGISTICS SUPPORT COMPANY	0	11	0	4	0	4	0	4
08527AA00	HOSP AUG TM, HEAD & NECK	0	1	0	0	0	0	0	0
08657L000	THEATER ARMY MEDICAL LAB	0	1	0	0	0	0	0	0
08695L000	MEDLOG BN (REAR)	0	13	0	7	0	7	0	7
08697L000	LOG SPT CO, MED BN, LOG (REAR)	0	7	0	4	0	4	0	4
08698L000	DISTRIBUTION CO, LOG (REAR)	0	6	0	3	0	3	0	3
08705L000	COMBAT SUPPORT HOSPITAL	0	2	1	1	0	1	0	1
08715L000	FIELD HOSPITAL	0	1	0	1	0	1	0	1
08725L000	GENERAL HOSPITAL	0	2	1	1	0	1	0	2
08858A000	HOSP CO, 84 BED, NSB	0	1	0	1	0	1	0	1
08863L000	MOBILE ARMY SURGICAL HOSP	0	1	0	1	0	1	0	1
08955A000	COMBAT SUPPORT HOSPITAL CORPS	0	2	0	2	0	2	0	2
08957A000	HOSP CO, 164 BED, CORPS	0	1	0	1	0	1	0	1
08958A000	HOSP CO, 84 BED, CORPS	0	1	0	1	0	1	0	1
31706L000	HQ & MAIN SPT CO, SOSB (ABN)	0	1	0	0	0	0	0	0
63906L000	HQ & MAIN SPT CO, SOSB (ABN)	0	1	0	0	0	0	0	0
63907L000	FORWARD SPT CO (ABN) SETAF	0	1	0	0	0	0	0	0

UNIT SRC	DESCRIPTION	SPO2 Simulator		Test Lung		Analyzer, Gas Anesthetic	
		Z14528		Z28075		TBD	
		OTOE	props'd	OTOE	props'd	OTOE	props'd
08057L000	Medical Co (MSB) HVY Div	0	1	0	1	0	0
08058L100	Medical Company, FSB, HVY DIV	0	1	0	1	0	0
08058L200	Medical Company, FSB, HVY DIV	0	1	0	1	0	0
08108F300	Med Co, Brigade Spt Bn	0	1	0	1	0	0
08158F000	Med Co, FWD SPT BN (XXI)	0	1	0	1	0	0
08257F000	MED CO, DIV SPT BN (XXI)	0	1	0	1	0	0
08267L000	MED CO, DIV SPT BN ABN (XXI)	0	1	0	1	0	0
08268L000	MED CO FSB, ABN	0	1	0	1	0	0
08277L000	MEDICAL CO, MSB, AASLT DIV	0	1	0	1	0	0
08278L000	Medical Company, FSB, AASLT DIV	0	1	0	1	0	0
08297L000	MED CO, MSB, LID	0	1	0	1	0	0
08298L000	MED CO, FSB, LID	0	1	0	1	0	0
08437L000	MED CO, HVY SEP BDE (HSB)	0	1	0	1	0	0
08438L000	MED CO, SEP INF BDE (SIB)	0	1	0	1	0	0
08438L100	MED CO, SEP INF BDE (SIB)	0	1	0	1	0	0
08456A000	HHD, AREA SUPPORT MED BN	0	1	0	1	0	0
08456L000	HQS & SPT CO (ASB)	0	1	0	1	0	0
08473A000	DENTAL COMPANY (AREA SPT)	0	0	0	0	0	0
08476L000	HHD, MED BN (DEN SVC)	0	0	0	0	0	0
08477L000	MED CO, SPT SQDN, ACR	0	1	0	1	0	0
08478L000	MED CO, DENTAL SVCS	0	0	0	0	0	0
08485L000	MEDICAL BN, LOGISTIC(FWD)	0	6	0	6	0	4
08487L000	LOG SPT CO, MED BN, LOG (FWD)	0	3	0	3	0	2
08488L000	DISTRIBUTION COMPANY	0	3	0	3	0	2
08488A000	MEDICAL LOGISTICS COMPANY	0	4	0	4	0	2
08489L000	MED TROOP, SPT SQDN, ACR	0	1	0	1	0	0
08496A000	HHD, MEDICAL LOGISTICS BN	0		0		0	0
08497A000	LOGISTICS SUPPORT COMPANY	0	4	0	4	0	2
08527AA00	HOSP AUG TM, HEAD & NECK	0	0	0	0	0	0
08657L000	THEATER ARMY MEDICAL LAB	0	0	0	0	0	0
08695L000	MEDLOG BN (REAR)	0	7	0	7	0	0
08697L000	LOG SPT CO, MED BN, LOG (REAR)	0	4	0	4	0	2
08698L000	DISTRIBUTION CO, LOG (REAR)	0	3	0	3	0	2
08705L000	COMBAT SUPPORT HOSPITAL	0	1	0	1	0	1
08715L000	FIELD HOSPITAL	0	1	0	1	0	1
08725L000	GENERAL HOSPITAL	0	2	0	2	0	2
08858A000	HOSP CO, 84 BED, NSB	0	1	0	1	0	1
08863L000	MOBILE ARMY SURGICAL HOSP	0	1	0	1	0	1
08955A000	COMBAT SUPPORT HOSPITAL CORPS	0	2	0	2	0	2
08957A000	HOSP CO, 164 BED, CORPS	0	1	0	1	0	1
08958A000	HOSP CO, 84 BED, CORPS	0	1	0	1	0	1
31706L000	HQ & MAIN SPT CO, SOSB (ABN)	0	0	0	0	0	0
63906L000	HQ & MAIN SPT CO, SOSB (ABN)	0	0	0	0	0	0
63907L000	FORWARD SPT CO (ABN) SETAF	0	0	0	0	0	0

Nomenclature	NSN	Model Number	Age	LE	Replacement Items/Life
Sealing Machine	3540-00-457-2706	2248	11	10	Current, still in production
Refrigerator, Mech Blood	4110-01-117-3902	BBR37	10	10	Interchangeable with HLT30V-4BB/NSN 4110-01-422-6809
Refrig 1cuft Incap	4110-01-287-7111	M-50BT	11	10	4110014512356, M-30TR
Refrigerator	4110-01-291-7046	61RF0503	15	12	4110014258009, Model 6CRF
Freezer, Mech Blood	4110-01-320-1699	MBF-500	10	10	Not current or available from MFG, no replacement identified
Ice Machine	4110-01-373-0032	BD0452A	8	8	Deleted, no replacement identified
Oven, Therm. Dr.	4430-01-060-9235	24AX-1	10	10	NSN not good, no knowledge of any replacement item
Cutter Ortho Cast 10"	6515-00-323-4510	840	8	8	Still current and being manufactured
Suction Pressure App.	6515-00-782-2625	05 6500	10	10	Semi-active, no replacement
Defibrillator/Monitor	6515-01-174-2406	LP 5	9	8	Replaced by Lifepak 10/6515014534003
Blood Recovery/Delivery	6515-01-240-6883	Cell Saver 4	10	8	Deleted without replacement
Suction App	6515-01-242-9123	308	12	10	Replaced by 326M/NSN 6515-01-435-0050
Drainage Unit 115/230v	6515-01-259-4307	6053	8	8	No replacement identified
Suction App	6515-01-284-8704	305	14	10	Replaced w/ Impact 325
Tourniquet Sys Pneu	6515-01-287-0607	ATS 1500	8	8	Replacement is ATS 2000, same NSN
Light Head	6515-01-290-8949	LUX31507	8	8	No replacement identified
Monitor EKG	6515-01-291-1198		15	8	Replaced w/ Protocol Propaq 206EL
Defib monitor	6515-01-291-1199	HP43110MC	11	8	Replaced by Lifepak 10/6515-01-453-4003
Pulse Oximeter	6515-01-293-5577	Biochem 3040G	15	5	Replaced by SIMS BCI 3303G/NSN 6515-01-452-7697
Suction Apparatus	6515-01-304-6497	308M	8	8	Replaced by IMPACT 326M/NSN 6515-01-435-0050
Defibrillator, Monitor	6515-01-305-1157	LP 5	8+	8	Replaced by Lifepak 10/6515014534003
Pacemaker Cardiac Ext	6515-01-310-1687	EC4542G	8	8	Replaced by 6515-01-491-4633 "W"
Thermometer, Clinical	6515-01-313-6242	600	8	8	No replacement identified
Monitor, Patient	6515-01-315-6197	Propaq 106	12	8	Replaced w/ Protocol Propaq 206EL
Defibrillator, Monitor	6515-01-345-9440	LP 6	15	8	Replaced by Lifepak 10/6515-01-453-4003
Stimulator Ultrasound	6515-01-378-4529	700C	15	8	Obsolete, no replacement identified
Cutter vacuum	6515-01-379-7852	G295202	8	6	Current, no replacement identified
Monitor Patient Vital	6515-01-418-2346	106EL	8	8	Replaced w/ Protocol Propaq 206EL
Monitor Patient Vital	6515-01-423-5796	106EL	8	8	Replaced w/ Protocol Propaq 206EL
Monitor Patient Vital	6515-01-423-5872	106EL	8	8	Replaced w/ Protocol Propaq 206EL
Monitor Patient Vital	6515-01-423-5877	106EL	8	8	Replaced w/ Protocol Propaq 206EL
Lt Set Dental	6520-00-000-0158	LF II	12	10	Replaced w/Aseptic ALU-29CF/NSN 6520-01-446-4170
Compressor, Dehy Dental	6520-00-139-1246	M5B	11	10	Replaced by PAC 6.7/same NSN
Chair and Stool Unit	6520-00-181-7349	CM185	12	10	Replaced by ASEPTICO ADU-10CF/NSN 6520-01-446-3783
Den Op Trt Unit	6520-01-272-4531	3406	15	10	Replaced by ASEPTICO /NSN 6520-01-456-7170
Processing Mach 115V	6525-00-420-9588	CURIX60	11	8	Replaced by Air Techniques 94050DL/NSN 6525-01-477-8734
Processing Machine, Rad	6525-00-823-8144	3474B	9	8	Discontinued without replacement
Xray App FLD Dental	6525-01-099-2320	D3152	11	12	Replacement is DentalEZ HDX/NSN 6525-01-425-5216
Illuminator Xray	6525-01-230-0603	FI0212	8	8	Current but also interchangeable with 6525-01-147-0212
Processing Machine, Rad	6525-01-303-6235	14X3-MIL	10	6	No replacement identified
X-Ray App Radport	6525-01-325-3740	Portaray 1200	11	10	Current, no replacement identified
Heater Heat Treat 4 PA	6530-00-711-3000	E-1	8	8	Current item
Light Surgical Field	6530-00-937-2204	5FL2204	8	8	No replacement identified
Irrigator Surgical	6530-01-314-1228	Stryker	12	10	No replacement identified
Ventilator, Portable	6530-01-324-4514	PLV-102	10	10	Replaced by IMPACT Eagle 754M/NSN 6530-01-455-1653
Edger Hand Opth lens	6540-00-299-8108	HE160	11	10	Item still being manufactured
Lense, Measuring Inst Oph	6540-00-299-8134	Y1-65-89	12	12	No replacement identified, several lensmeters in UDR current
Sink, Surgical Scrub	6545-01-117-3894	1001N-1-M	17	10	Replaced by Ran-Paige Scrub Sink/NSN 6530-01-429-6715
Refractometer	6550-00-933-3218	10400A	10	10	Current Item but renamed Reichert Cat No. 1310400A
Analyzer, Sodium k	6630-01-298-7060	614	8	8	Function replaced by Abbott iSTAT/NSN 6630-01-411-2405
Analyzer, Sodium K	6630-01-300-8711	M614	10	8	Function replaced by Abbott iSTAT/NSN 6630-01-411-2405
Analyzer, Blood Gas	6630-01-344-4058	4300M	10	8	Function replaced by Abbott iSTAT/NSN 6630-01-411-2405
Coag Timer	6630-01-344-9996	Electra 750	8	8	Current Item but serviced by Beckman-Coulter
Centrifuge, Lab	6640-00-145-1180	522	10	8	Current Item
Water Bath, Electric	6640-00-765-0621	148003	11	10	Current Item
Centrifuge, Lab	6640-00-930-9034	Z230	11	8	No replacement identified

Sample Data Collection Monthly Report March 2003



Submitted to:
U.S. Army Medical Materiel Agency
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland



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Report # 014

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Introduction: The U.S. Army Medical Material Agency (USAMMA) serves as the Army Medical Department's (AMEDD) strategic level medical logistics organization. USAMMA's mission is to enhance the medical material readiness throughout the full range of military health service support missions worldwide. In this role USAMMA develops and implements innovative logistics concepts and technologies as well as promoting military and medical logistics information and knowledge.

The agency's core skills and technologies center on conducting life cycle management for commercial and non-developmental items, sustaining and modernizing the medical force, supporting exercises and contingency operations and disseminating medical logistics information and knowledge. Two of USAMMA's critical groups tasked with this mission are the Maintenance Engineering Operations Directorate (MEOD) and the Technology Support Division (TSD). The MEOD is responsible for the maintenance of all the medical equipment while the TSD is responsible for ensuring the medical technology is sustainable and meets current and future utilization requirements.

In order to enhance the strengths of MEOD and TSD, USAMMA has contracted, (contract # DAMD17-01-D-0004), with McAdams Technologies Inc., (subcontracted to Information Systems Support Inc. March 2001), to develop and implement a sample data collection program for targeted medical devices. The overall focus of this program is to assist USAMMA in supplying medical field equipment, and DEPMEDS facilities with current, and sustainable medical technology in a fiscally efficient manner.

Scope: This document, the fourteenth Sample Data Collection (SDC) report, includes information on the potential for gravity free-flow problems with infusion pumps in unit assemblages, research into rotor requirements for newer centrifuges in maintenance depots that were procured without the rotors, and electrosurgery generators in unit assemblages deployed to Southwest Asia. Also included is information on a formulary of medical Special Purpose, Test, Measurement, and Diagnostic Equipment (TMDE-SP) for medical organizations deployed in support of Operation Iraqi Freedom.

Technology Support Issues

The following equipment and technology issues were addressed during March.

Infusion Pumps and Gravity Free-Flow Problems

SUBJECT: IV Pump Free-Flow Issue

1. **BACKGROUND.** E-mail was received from MEDCOM HQ wondering if there was a chance deployed medical assets could possibly have older infusion pumps that were able to “free-flow” medications.

2. **DISCUSSION.** In the later part of the 1990's a number of medication errors using infusion pump therapies were traced to "free-flow." When a door to an infusion pump was open and the fluid bags weren't clamped shut, fluids could free-flow through the tubing into the patient. If medications were added to the IV fluids, this resulted in drug overdoses. Because of the numbers reported, changes were engineered into the administration sets to preclude free-flow without human intervention. Today, IV administration sets for the American market are manufactured with some method of free-flow protection.

From speaking with personnel from MEOD, it appears infusion pumps were not widely included in older Unit Assemblages (UAs). The only infusion pumps identified in any of the UAs for TO&E facilities are the Alaris Medsystem III and the Infusion Dynamics Power Infuser. The Medsystem III comes with free-flow protection. The Power Infuser is NOT a drug delivery device; it is for rapid delivery of IV fluids only so its manufacturer states free-flow protection does not apply to this device.

3. **RECOMMENDATION:** The major issue with free-flow was NOT the pumps but the IV fluid administration sets. Older sets, before this problem came to light, required human intervention to clamp the tube to stop the flow of fluids when tubing was removed from the pumps. Administration sets have since been redesigned with free-flow protection so fluids won't flow without human intervention.



Figure 1. Alaris Medsystem III Infusion Pump

Centrifuges in Depot without Rotors

SUBJECT: Centrifuges in Depot purchased without rotors

BACKGROUND: During preventive maintenance at the Hill Depot, a number of new centrifuges could not be tested because they were purchased without rotors. Looking into the issue, it was noted centrifuges could be used for different purposes so companies have a variety of rotors to choose from based on the specific needs of the user. For instance, blood banks have a need for swinging bucket rotors while clinical laboratories have a need for rotors capable of securely holding specific sizes of test tubes or bottles. The cost of the rotors are relatively high so purchasing all available options would be cost prohibitive. Figure 1 is a picture of a Thermo IEC brand, model PR-7000M refrigerated floor model centrifuge that were purchased without rotors. These units were earmarked for use in a blood bank assemblage and, as such, required swinging bucket rotors as seen in Figure 2 at a cost of over \$4,000 each. Figure 3 shows an optional fixed-angle rotor that could also be procured.



Figure 2. PR-7000M Centrifuge



Figure 3. Swinging Bucket Rotor

RECOMMENDATION: Separate national stock numbers should be assigned to centrifuges based on where the centrifuges will be used, even if the same model centrifuge is used in different environments. The essential characteristics for the centrifuges (ECs) should take into account where they will be used and the rotor choice that needs to be purchased as part of the system to make it fully usable.



Figure 4. Fixed-Angle Rotor

Electrosurgery Units and Pencil Electrodes

SUBJECT: Incompatibility between electrosurgical apparatus and pencil electrodes being used in Southwest Asia

BACKGROUND: A complaint was received from the Medical Logistics Support Team (MLST) supporting medical operations in Southwest Asia. The complaint mentioned the electrosurgical pencils supplied in the unit assemblage were incompatible with the electrosurgical unit.

DISCUSSION: In researching this issue, the pencils included with the electrosurge were found to be compatible with the unit but they didn't have electrodes installed. The problem was with the electrodes in the assemblage that should have, but didn't, fit the existing hand pieces. The pencils were compatible but the replacement electrodes in the assemblage were meant for an older model pencil and those electrodes were not updated when the electrosurge unit was modernized. A Valleylab representative mentioned that although many third-party pencils are compatible for use with Valleylab equipment, the replaceable electrodes are unique to the manufacturer and so they may or may not be compatible with other makes and models of pencils. In this case, the electrodes would not work with the newer pencils.



Figure 5. Valleylab Force FX



Figure 6. Valleylab Force 2

RECOMMENDATION: Valleylab models SSE2L, Force FX, and Force 2 can use the electrosurgical supplies listed in the 2267 FST unit assemblage, among them is a disposable pencil, a reusable pencil, and patient return electrode pad. Although there are many other options available for electrosurge units, for example footswitches, ball electrodes, and bipolar forceps, the environment these units are used in makes them fully operational with basic hand pieces and patient grounding pads. The accessories shown in Table 1 should be compatible with all current Valleylab electrosurge units.

Table 1. Valleylab SSE2L, Force FX, and Force 2 Electrosurgical Generator Consumables.

NSN	Nomenclature	PN	QTY	UI	Unit Price	Total Price	MFG	Shelf Life, months	Refrig Y/N
6515-01-197-7649	Electrode, grounding, single use	E7507	1	50 PG	\$3.19	\$159.98	Tyco Healthcare DBA Valleylab	Indef	N
6515-01-156-3011	Electrode, electrosurgical apparatus with removable blade	130305	1	40 PG	\$5.96	\$238.43	ConMed	Indef	N
6515-01-096-0217	Handle and electrode set, electrosurgical apparatus	E2100	1	10 EA	\$25.53	\$255.29	Tyco Healthcare DBA Valleylab	Indef	N



Figure 7. Examples of Valleylab Pencils



Figure 8. Examples of Valleylab Patient Return Electrodes

MEOD Issues

The following maintenance issues were addressed during March.

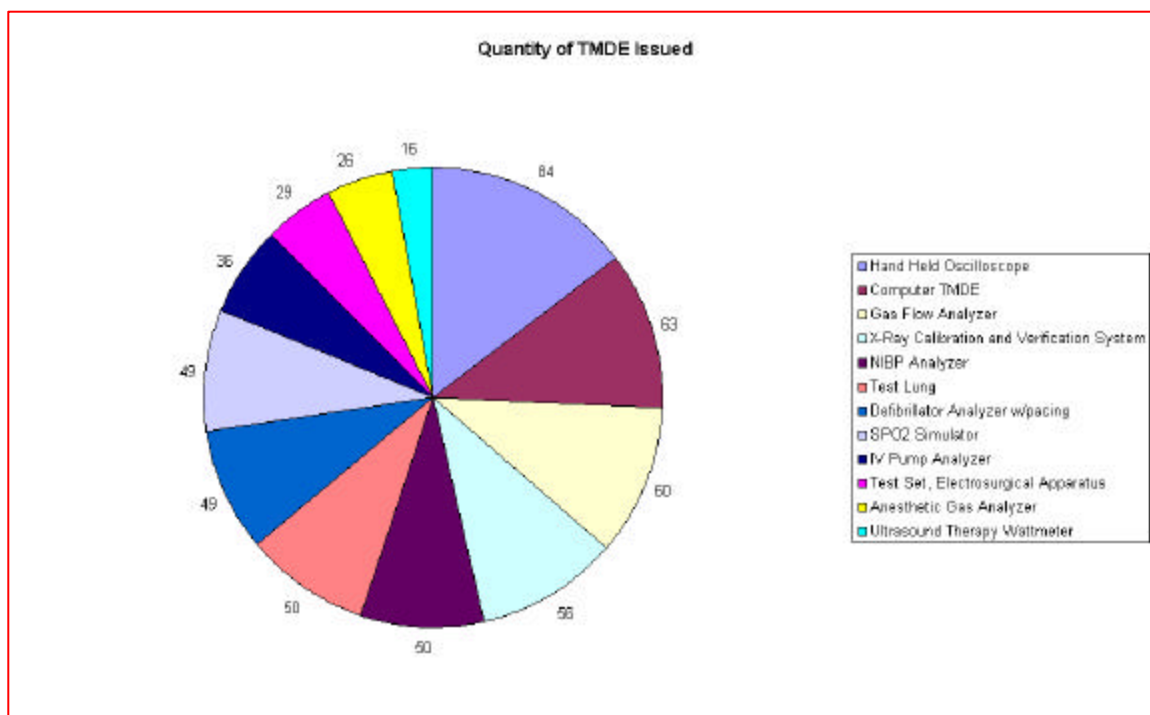
Test, Measurement, and Diagnostic Equipment (TMDE)

The Maintenance Engineering and Operations Directorate, US Army Medical Materiel Agency has compiled and distributed a formulary of medical Special Purpose, Test, Measurement, and Diagnostic Equipment (TMDE-SP) for medical organizations deployed in support of Operation Iraqi Freedom.

The Medical Maintenance Operations Division, Tracy, received, processed, and issued approximately 600 TMDE-SP items to deployed and deploying medical units with a medical maintenance mission.

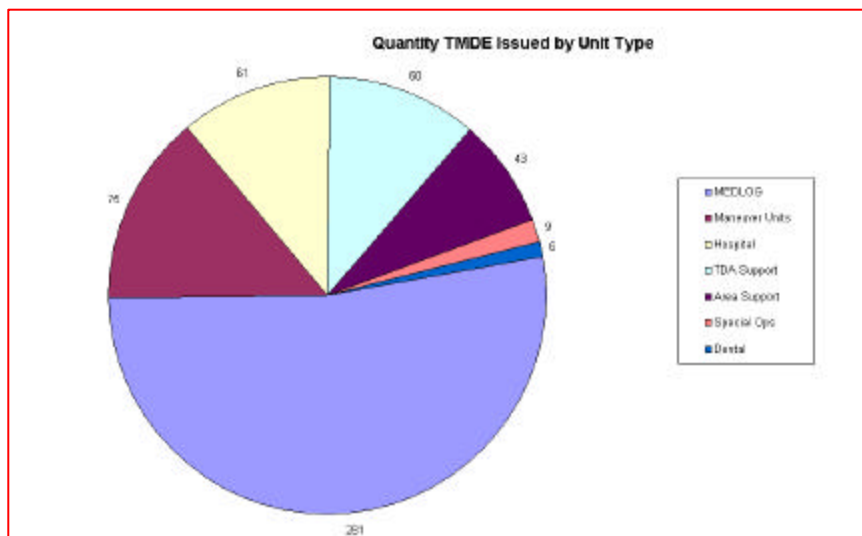
A break down the types and quantity of TMDE-SP that were issued is depicted in Graph 1.

Graph 1. Quantity of TMDE Issued.



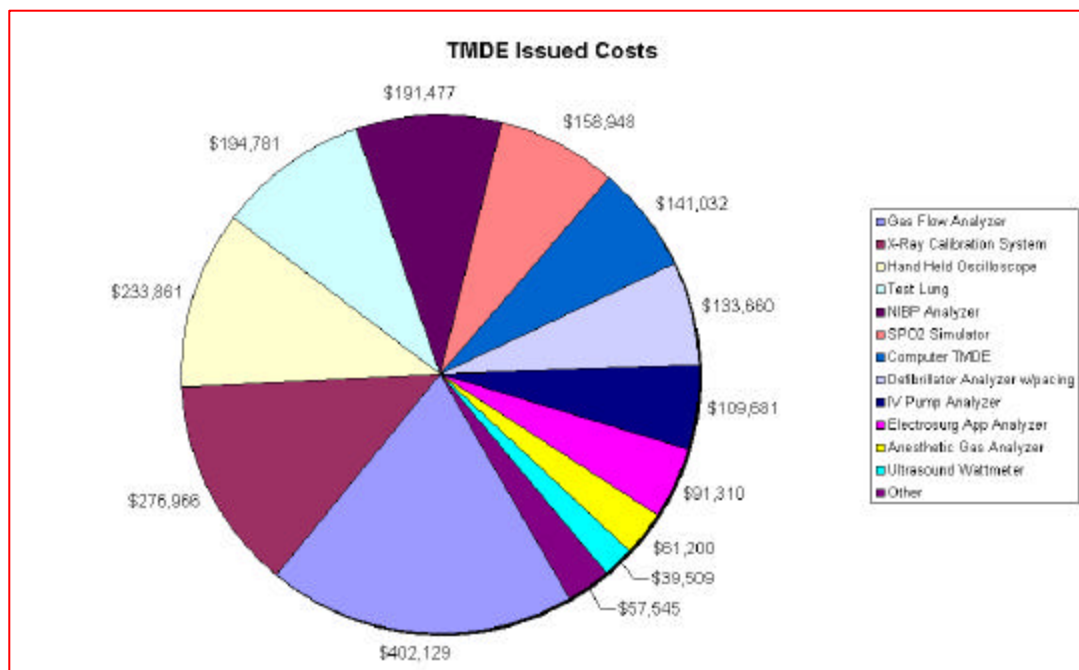
A break down the quantity of TMDE-SP that were issued to the different types of organizations is depicted in Graph 2.

Graph 2. Quantity of TMDE Issued by Unit Type



The costs associated with each type of TMDE-SP that was issued to the deploying force is depicted in Graph 3.

Graph 3. Costs of TMDE Issued.



Sample Data Collection Monthly Report April 2003



**Submitted to:
U.S. Army Medical Materiel Agency
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland**



Prepared by:
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Report # 015

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Introduction: The U.S. Army Medical Material Agency (USAMMA) serves as the Army Medical Department's (AMEDD) strategic level medical logistics organization. USAMMA's mission is to enhance the medical material readiness throughout the full range of military health service support missions worldwide. In this role USAMMA develops and implements innovative logistics concepts and technologies as well as promoting military and medical logistics information and knowledge.

The agency's core skills and technologies center on conducting life cycle management for commercial and non-developmental items, sustaining and modernizing the medical force, supporting exercises and contingency operations and disseminating medical logistics information and knowledge. Two of USAMMA's critical groups tasked with this mission are the Maintenance Engineering Operations Directorate (MEOD) and the Technology Support Division (TSD). The MEOD is responsible for the maintenance of all the medical equipment while the TSD is responsible for ensuring the medical technology is sustainable and meets current and future utilization requirements.

In order to enhance the strengths of MEOD and TSD, USAMMA has contracted, (contract # DAMD17-01-D-0004), with McAdams Technologies Inc., (subcontracted to Information Systems Support Inc. March 2001), to develop and implement a sample data collection program for targeted medical devices. The overall focus of this program is to assist USAMMA in supplying medical field equipment, and DEPMEDS facilities with current, and sustainable medical technology in a fiscally efficient manner.

Scope: This document, the fifteenth Sample Data Collection (SDC) report, includes information obtained during an SDC survey and technology assessment of the 994th Medical Detachment in Austin, Texas that recently returned from a six-month field deployment to Afghanistan in support of Operation Enduring Freedom. Also included is an effort by the Laboratory Combat Developer to standardize centrifuges found in the Laboratory Unit Assemblages. Finally, there is a comparison of the costs for procuring medical Special Purpose, Test, Measurement, and Diagnostic Equipment (TMDE-SP) as well as Medical Standby Equipment Program (MEDSTEP) items by two different procurement sources and the savings realized by using the U.S. Army Medical Research Acquisition Activity (USAMRAA) instead of the Defense Supply Center Philadelphia (DSCP).

Technology Support Issues

The following equipment and technology issues were addressed during April.

Report from Visit to 994th Medical Detachment (Veterinary Services)

SUBJECT: Trip Report for SDC Visit to 994th Medical Detachment (Veterinary Services), Austin, Texas. 28-30 April, 2003.

1. Robert Zak, Clinical Engineer Consultant from ISS, Inc. on contract to the US Army Medical Materiel Agency-Technology Support Division, visited the 994th Medical Detachment for the purpose of conducting a Sample Data Collection survey. He met with LTC Craig Carter, USAR, VC and SGT Kimberly Woodhouse to gather information and feedback from the unit's six-month rotation in support of Operation Enduring Freedom (OEF).
2. Many of the issues discussed are covered in a memorandum written by LTC Carter and is included at the end of this trip report. The memorandum also includes feedback from members of the unit who were deployed. Many of the issues were brought to Mr. Zak's attention during his visit and possible solutions were discussed. In the case of vital signs monitors, it should be noted veterinary units were slated to receive vital signs monitors but the 994th Medical Detachment did not have them during their deployment and had not received them prior to this visit.
3. The unit's anesthesia unit was the Ohmeda 885A. The unit is heavy and cumbersome and there was a question of whether this unit could deliver new anesthetic agents. This anesthesia unit is considered obsolete and is being replaced in operating suites by the Narkomed M. There are veterinary-specific anesthesia units available that are light, more mobile, and possibly cheaper to operate instead of having to adapt human anesthesia units for veterinary purposes.
4. Two centrifuges were looked at. One was a Hermle Z230, which looked to be in very good shape. The other unit was a Clay Adams Compact II that was also well taken care of. The problem was the centrifuges were specific to either doing hematocrits or spinning blood in tubes. There are centrifuges that are capable of doing both.
5. Refrigeration units assigned to the unit were Thermopol solid-state refrigerators. These were not considered very useful, as their capacity was very limited. The units also did not have clinical laboratory capabilities so specimens needed to be shipped out of the local area for testing but they could not be packed properly because they had no ice-making capabilities. Refrigerators with ice-making capabilities for packing specimens for shipment would be a useful addition.
6. The exam/surgical tables assigned to the unit were small and heavy. They functioned well as exam tables but also had to double as surgical tables, which presented a problem because their length was not adequate for operating on military working dogs. Also, because of a dog's skeletal structure, a v-trough of some sort would assist the veterinarian working on a dog. A surgical table with a v-trough capability or a separate v-trough item that could be placed on the surgical table to support the dog's backbone would help in this respect. The current surgical table used with the Forward Surgical Teams could work if a v-trough adapter was also included.

7. The self-contained field surgical light was not a useful item. Its bulky size, when put together, made it difficult to fit into the tents assigned to the detachment. A more useful system could be the surgical table used by the Forward Surgical Teams (FST) that includes smaller exam lights that integrate with the stand assembly and could be easily adjusted.

8. The otoscope and ophthalmoscope set had rechargeable batteries that did not hold a charge for very long. Once initially charged, NiCad batteries develop a memory and if they aren't exercised on a regular basis (fully charged and then fully discharged) their capacity to hold a charge diminishes. Changing to a handle that uses "C" or "D" size batteries wasn't a good idea because keeping an adequate supply of batteries was difficult. Changing from NiCad to Lithium rechargeable batteries sounded like the right solution because lithium batteries do not retain a memory like NiCad batteries do. Also, the speculum's supplied with these sets are for human use. Dogs, however, have a deeper ear canal and require a selection of sizes that are longer. Veterinary specific speculums are available.

9. Hair clippers and the assortment of blade attachments do not fit the clipper. The model of clippers may have changed over time with a change in blade attachment mechanisms but the blade attachments are separate line items in the UA that may not have been addressed.

10. Computers are not part of the UA but many medical research mechanisms are found either on-line or are contained on compact disk that cannot be accessed unless someone brings a personal computer on the deployment. The computer capability is then dependent on the computer owner's rotation schedule.

11. Each squad of the detachment travels with a kit for inspecting meat slaughtered in country (UA1909). If all food will be shipped in, as was the case on this deployment, this UA could be eliminated or the allowance reduced, the savings amount to approximately 400 pounds per set.

12. Other items concerning the deployment that were not discussed during the visit but were received from the members of the unit are contained in the memorandum submitted by LTC Carter and is included below.

Robert Zak
Clinical Engineer Consultant, ISS, Inc.
USAMMA
Fort Detrick, MD

Enclosure: The following memorandum contains feedback from the Commander of the 994th Medical Detachment (Veterinary Services Large), an Army Reserve unit recently returned from a six-month field deployment in support of Operation Enduring Freedom (OEF).

MEMORANDUM FOR Veterinary Services (VS) Combat Development, Fort Sam Houston, TX and Mr. Robert Zak, Clinical Engineering Consultant to USAMMA, Fort Detrick, MD and others involved in equipment planning and sourcing for VS units

THRU COL Alvin Baumwart, Commander, 994th MED DET Austin, TX, COL David Trask, Commander 406th MED DET, Austin, TX

SUBJECT: Feedback from U.S. Army Veterinary Corps officers and enlisted recently deployed: How well are USAR Veterinary Services Large units equipped to mobilize and deploy?

1. Overview-- The 994th MED DET was deployed in two increments to Southwest Asia during the period Nov 2001 through Aug 2002 in support of Operation Enduring Freedom (OEF). The 109th MED DET relieved the 994th in Aug, 2002 and is still in theatre. During these deployments, equipment deficiencies have been noted by the officers and enlisted members of these units. Some of this information has been disseminated to individuals in Combat Development at Fort Sam Houston, at the CFLCC OEF Medical AAR in Oct 2002, to the Council on Army Veterinarians (CAV) and former Veterinary Corps Chiefs meetings in Feb, 2003. On 29 Apr 2003, LTC Craig Carter (Commander of the 994th MED DET during the deployment) met with Mr. Robert Zak, USAMMA consultant as part of a technology assessment of the 994th MED DET. This document is an attempt to more completely summarize the concerns regarding the appropriateness of equipment available to these units for deployment. In as much as the Veterinary Service Large equipment sets have not been modernized for over two decades, we sincerely hope that this report will help those who are in a position to correct these deficiencies and to better understand the problems that arose in the field during these deployments. We are aware of the proactive work being done by CW5 Farrell and CW4 Barnes in revamping the 1913 and 1914 kits and also building of the Audit Inspection Kit, Field Test Kit and the Food Inspection Kit. This is very good news and we are all looking forward to receiving more information on these new kits.

2. Doctrinal philosophy-- The Army doctrine for a Veterinary Services Large unit is for a full deployment with functional squads to be positioned within 50 km of the headquarters unit. However, all deployments in recent history have been partials with a wide distribution of squads, sometimes well over 500 km apart from the headquarters. If this mode of deployment is now the norm, then each squad must be prepared to provide Level 2+ care. This doctrinal change will necessitate changes in the equipment available for deployment. Another important question is should field slaughter still be considered a valid Veterinary Services function? If not, some equipment sets can be shrunk or eliminated (Note: the 994th MED DET does not have the current edition of the Class 1-2 SKO).

3. General Observations--

Surgery and medicine supplies and equipment are commingled making it difficult to find things.

Solution— Separate the supplies and equipment for surgery and medicine and place in separate kits.

Ante-Mortem/Field Slaughter necessary? **Solution--** If field slaughter is not an option, this can equipment can be eliminated.

Food Inspection Kits necessary? **Solution—** Since we now do not procure meat overseas can these kits be eliminated? Individual inspector kits are still useful however—could be updated.

SKO's are too bulky, difficult to organize for a mobile operation. **Solution—** Outfit HMMWV's with a Bowie or Bowie-like unit with refrigeration and running water capability and stock with only the necessary equipment and drugs. This would enable a mobile medicine and HMMWV-side minor surgery capability for MWDs, privately-owned animals and also for large animal medicine calls (POAs and Humanitarian Assistance mission-related livestock).

PCAMS descriptions of items are vague if the stock number is not available. Suture material is a good example. The descriptions don't state size, material, needle included. Solution—Recommend a way to expand the nomenclature in PCAMS on these items or cross reference to a products on the market that are recognizable.

Food Inspection and Necropsy supplies are hard to obtain through USAMMA because they aren't considered true medical items. Solution—Make these items available through USAMMA.

Current formulary out-of-date. Solution—Update formulary based on the input of young VCOs that are actively practicing veterinary medicine.

4. Major Medical Equipment Problems/Needs--

No computer technology for squads in the field. Needed for access to approved source lists and other medical and food safety resources on the web, for writing reports, email for command and control, basic telemedicine capability. Solution—Provide a laptop computer, printer and digital camera for each squad.

Surgery table too heavy, too short, and inappropriate for MWD surgery. The stainless steel surgery table with folding legs is too short and does not provide a V-stand in support of a MWD surgery. Solution—Replace with a FST (Field Surgery Table) with a V-stand or other appropriate veterinary surgery table. The FST table has integrated surgical lighting that will eliminate the need for a separate surgery light (see surgery light problem listed below).

Gas anesthesia machine bulky, expensive and outdated and not enough units available. Existing vaporizer may not work with newer anesthetic agents. Solution—Replace with newer, lighter and less bulky (table-top?) anesthesia machines and if doctrine changes on distance between squads, provide one per squad. Vaporizer operation is questionable in very hot climates with no environmental control units (ECUs). Provide one anesthesia machine per squad to facilitate deployments with large distances between mission sites.

Fluid administration tools not available. Solution—Provide an infusion pump (USAMMA consultant suggests the Alarias Med System III).

No access to clinical laboratory testing. Solution—Provide an I-Stat unit to do serum electrolytes, blood gases, hematocrit, glucose, BUN and more. However, this unit will require more refrigerated storage for extending the life of reagents. Other units such as the Abaxis VetScan Clinical Chemistry and Hematology systems might be appropriate for basic field laboratory support (Chem panels and differentials).

No ability to monitor vital signs during surgery and after. Solution—Provide a vital signs monitor (USAMMA consultant suggest the Propaq 206 by Welch Allyn).

No radiology capability. Military hospitals cannot always be relied on to help fulfill radiology needs of veterinary units. Solution—Provide a portable, digital radiology unit. The digital unit would eliminate the need for a developer and reagents and would also tie directly in with a telemedicine capability (USAMMA consultant suggests the Min Xray veterinary unit coupled with the Kodak ACR 2000 digital imaging system).

Field refrigerator (Thermopol) is unreliable, has limited storage, no freezer compartment. Solution—replace or augment with newer technology that is lighter, more durable and has more storage and freezer capability (re email from LTC Mack Fudge, “New refrig/freezer”, 29 Jan 2003).

No capability for rapid detection of pathogens. Microbiology laboratory capability is minimal or non-existent in the theatre and it is difficult to get specimens to major labs (VLE in Landstuhl) quickly. Also, Preventive Medicine units are not always in theatre to do this testing. Solution—consider providing Colilert by IDEXX, Charm LUM-T or other rapid diagnostic test kits/instruments. A major consideration on these units is storage, cost and shelf-life of reagents.

Centrifuge bulky/breaks down regularly. Solution—Identify and procure a lighter, more mobile and reliable centrifuge for each squad that can spin tubes for serum separation as well as capillary tubes for hematocrit determination. Current model in inventory is heavy and subject to frequent breakdowns.

Surgery light too large for frame tents and is cumbersome to set up and repack. Solution—Using the FST will eliminate the need for this light. Otherwise, source a smaller, more practical field surgical lamp.

Reference books are bulky and out-of-date. Solution—VCOs should have access to information resources on the Internet such as Veterinary Information Network (VIN). Other resources should be provided on CDs kept up-to-date through annual maintenance contracts (e.g. 5-minute Consultant, ACVIM proceedings).

Otosopes/Ophthalmoscopes not appropriate and do not hold charge. Solution—Provide veterinary cones and purchase lithium rechargeable battery packs.

Blades don't fit hair clippers. Solution—Provide the appropriate size and type clipper blades for the clippers in our inventory.

Mercury thermometers useless in hot climates. Solution—Provide digital or laser thermometers.

Dental instruments inadequate. Solution—Procure the additional instruments (POC CPT O'Neal, 994th MED DET).

Animal control gear lacking. At literally all sites, animal control problems exist and task force Commanders look to VS to help solve these problems. At evolved posts/bases, this would be a PMO or a DPW function. In immature theatres, this support will likely not be available and VS will probably have to get involved. Solution—Provide a base set of animal control equipment—humane traps, squeeze cages, dart gun, capture snares, etc.

5. Medical Consumables Problems/Needs--

Equipment set formulary needs updating, some drugs not available through USAMMA. Solution—Formulary should undergo an annual review and update. Add newer drugs into the system to make them easily available to deployed units.

Need more variety in available suture material, descriptions in UA listings not adequate (e.g. with or without needle?, type of suture?). Consumables available through USAMMA need to undergo regular reviews and updating. Nomenclature in computer should be clarified as to the exact type of product.

6. Major Non-Medical Specific Equipment Problems/Needs--

Information Technology equipment non-existent. Much of the emphasis in improving Veterinary Services by the U.S. Army in the last decade has been through the application of information technology (i.e. Lotus Notes, deployment CDs, etc). In addition, the U.S. Army has spent an enormous amount of money to create on-line services for soldiers (EMSS, U.S. Army On-Line and much more). Because of satellite technology, Internet access is available almost immediately in deployed areas, sometimes even before telephone service (NIPRNET and SIPRNET access was available very early on in the Afghanistan theatre). On extended remote deployments, there may be no other way to maintain one's veterinary license other than to do Continuing Education on the Internet. An unlicensed VCO is no longer a useful asset to the U.S. Army. Yet there has been no money allocated to provide computers for MTOE units that deploy. Solution—Make the funds available to provide a laptop computer, printer, and a digital camera available for each squad in a VS Large or Small unit.

ECU's needed in hot climates. Southwest Asia theatre can have temperatures exceeding 130 degrees Fahrenheit for weeks on end. Digital equipment, computers, anesthesia machine vaporizers and other equipment will not function reliably under these conditions. Solution—provide an adequate number of ECUs for deployment with all USAR VS units. However, this would also necessitate having a dedicated 10KVA generator per ECU.

Generators are outdated and it is almost impossible to obtain repair parts in the field. In Afghanistan, our generator was absolutely essential to the performance of our mission as Prime Power was not available until after we left the theatre. In addition, repair and maintenance parts were not readily available. Solution—Provide newer, maintainable generators.

Hand tools needed. When establishing and maintaining operations in a new theatre, basic innovative construction has a major role in building floors for the tents, installing equipment in the new environment, etc. Solution—Provide a basic battery powered tool set (drill, saw, screw driver, hammers, etc).

Basic transportation is essential. The 994th was denied deploying with its rolling stock. Once in theatre, making the rounds at the flight line and the SSA required miles of walks daily and precluded the movement of subsistence for inspection at the vet tent (e.g. MREs). Solution—Assuming veterinary units will not be able to take their HMMWVs on deployments, alternate modes of transportation must be provided in the theatre (e.g. John Deere Gators).

Adequate communication gear. Veterinary Service Large units only have 3 DNVF telephones authorized in the MTOE yet in the recent deployment, we had six squads scattered in different countries. Solution—Provided one DNVF telephone per squad. Consider providing satellite phones for command and control communications between squads and headquarters. Walkie-talkies would be very useful for on post operations.

Need for secure storage. Secure storage capability for items larger than what can be placed in the field safes was needed in many locations. Solution—Consider providing conex-like large storage containers that could be used for shipping equipment on pallets during deployment and then storage and security of equipment while in the field.

Tents not adequate for all types of operations and too few in number. Solution— Provide temper, frame or modular tents that are suitable for use with ECUs and are easy to set up and break down. Two-man tents would be useful for highly mobile operations (re recent operations of the 109th MED DET in Iraq). In addition, each squad needs 3 frame tents (assuming frame tents will be the norm)—one for quarters, one for storage, and one for the clinic.

7. We would all like to thank you for requesting for our input and for taking the time to read about and understand some of the problems experienced during the recent deployment. Updating some of the equipment and making some important additions will, in our opinion, help to greatly increase the effectiveness of VS units in the field and will also improve the morale and professional satisfaction of the soldiers that are doing the job. Please don't hesitate to call me with any questions you might have. If I can't help you directly, I will refer you to one of our many subject matter experts in the unit.

CRAIG N. CARTER, LTC USAR VC
Operations Officer
994TH MEDICAL DETACHMENT (VET SVC LGE)
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Effort to Standardize Centrifuges in Laboratory Sets

SUBJECT: Major Kevin Belanger, the Combat Developer at AMEDD Center and School, has compiled a list of centrifuges that would both modernize and standardize the centrifuges in the laboratory sets he is responsible for. Current centrifuges have multiple uses with several options for rotors and adapters specific to their use. However, these rotors and adapters have to be ordered as separate line items along with the centrifuge as none are included with the centrifuge. In recent months, maintenance depots found newer centrifuges that were purchased without rotors so operational checks could not be performed on them. Separate purchase orders then had to be submitted for the additional parts to make operable systems, which required additional research to find out what assemblage they were earmarked for to ensure proper rotors and accessories were identified. This effort by the Combat Developer will standardize centrifuge models and designate not only which centrifuge should be purchased, but also which rotors and accessories need to be ordered along with it specific to the Unit Assemblage (UA) it was purchased for. The following is that list.

Centrifuge Requirements **(April 2003)**

1. This is a list of centrifuge requirements **for laboratory sets only.**

164 BED NSB CSH (08857A000)

None Required

84 BED NSB CSH (08858A000)

M303 Lab

6640-01-495-4051 IEC Table Top Centrifuge (CL2) Product # 426 (2)
Rotor with swinging bucket for above 6640-01-495-3773 (2)
Adapter 5-7ml inserts 6640-01-495-5598 (2 pair)
Adapter 7-10ml inserts 6640-01-495-5607 (2 pair)
Adapter 15ml inserts 6640-01-498-2122 (2 pair)

6640-01-499-0533 IEC Specialty Centrifuge Product # 8464 (1)
Rotor with swinging bucket for above 6640-01-499-1632 (1)
Adapter 5x15ml and 4x12ml 6640-01-499-1637 (1 pair)
Adapter 4x250ml 6640-01-500-4272 (1 pair)
Adapter 2x50ml and 2x20ml 6640-01-499-1640 (1 pair)

M304 Lab Blood Bank

Working new NSN IEC Refrigerated Centrifuge GP8R Product # 3122 (1)
Rotor with swing bucket Product # 228 working new NSN (1)
Adapter 7-15 ml inserts Product # 5719 working new NSN (1 pair)
Adapter 5-7 ml inserts Product # 5827 working new NSN (1 pair)
Adapter for Blood Bags Product # 2077 working new NSN (2 pair)

164 BED SB CSH (08957A000)

M703 Lab

6640-01-495-4051 IEC Table Top Centrifuge (CL2) Product # 426 (2)
Rotor with swinging bucket for above 6640-01-495-3773 (2)
Adapter 5-7ml inserts 6640-01-495-5598 (2 pair)
Adapter 7-10ml inserts 6640-01-495-5607 (2 pair)
Adapter 15ml inserts 6640-01-498-2122 (2 pair)

M704 Lab Blood Bank

Working new NSN IEC Refrigerated Centrifuge GP8R Product # 3122 (2)
Rotor with swing bucket Product # 228 working new NSN (2)
Adapter 7-15 ml inserts Product # 5719 working new NSN (2 pair)
Adapter 5-7 ml inserts Product # 5827 working new NSN (2 pair)
Adapter for Blood Bags Product # 2077 working new NSN (2 pair)

84 BED SB CSH (08958A000)

M503 Lab

6640-01-495-4051 IEC Table Top Centrifuge (CL2) Product # 426 (2)
Rotor with swinging bucket for above 6640-01-495-3773 (2)
Adapter 5-7ml inserts 6640-01-495-5598 (2 pair)
Adapter 7-10ml inserts 6640-01-495-5607 (2 pair)

Adapter 15ml inserts 6640-01-498-2122 (2 pair)

M504 Lab Blood Bank

Working new NSN IEC Refrigerated Centrifuge GP8R Product # 3122 (2)

Rotor with swing bucket Product # 228 working new NSN (2)

Adapter 7-15 ml inserts Product # 5719 working new NSN (2 pair)

Adapter 5-7 ml inserts Product # 5827 working new NSN (2 pair)

Adapter for Blood Bags Product # 2077 working new NSN (2 pair)

MEDICAL COMPANY (08457A000)

MES 0263 Lab Light

6640-01-495-4051 IEC Table Top Centrifuge (CL2) Product # 426 (1)

Rotor with swinging bucket for above 6640-01-495-3773 (1)

Adapter 5-7ml inserts 6640-01-495-5598 (1)

Adapter 7-10ml inserts 6640-01-495-5607 (1)

Adapter 15ml inserts 6640-01-498-2122 (1)

BLOOD DETACHMENT (08489A000)

MES 0503 Blood Bank Processing

Working new NSN IEC Refrigerated Centrifuge GP8R Product # 3122 (2)

Rotor with swing bucket Product # 228 working new NSN (2)

Adapter 7-15 ml inserts Product # 5719 working new NSN (2 pair)

Adapter 5-7 ml inserts Product # 5827 working new NSN (2 pair)

Adapter for Blood Bags Product # 2077 working new NSN (2 pair)

6640-00-145-1180 Centrifuge 115V Beckon and Dickerson single phase no rotor needed.
(Serofuge)

ADDITIONAL UNITS

MMS 403 Lab Microbiology

6640-01-499-0533 IEC Specialty Centrifuge Product # 8464 (1)

Rotor with swinging bucket for above 6640-01-499-1632 (1)

Adapter 5x15ml and 4x12ml 6640-01-499-1637 (2)

Adapter 4x250ml 6640-01-500-4272 (2)

Adapter 2x50ml and 2x20ml 6640-01-499-1640 (1)

Kevin J. Belanger

MAJ, MS

Combat Developer

210-221-2791

MEOD Issues

The following maintenance issues were addressed during April.

Procurement of Test, Measurement, and Diagnostic Equipment (TMDE)

As a result of advances in medical equipment technology and the fielding of new equipment items to the medical organization throughout the Army, it was imperative to field a substantial quantity of Special Purpose (Medically Unique), Test, Measurement, and Diagnostic Equipment (TMDE-SP) to the deploying forces in support of Operation Iraqi Freedom. A decision was made to utilize the U. S. Army Medical Research Acquisition Activity (USAMRAA) rather than the Defense Supply Center Philadelphia (DSCP) to procure the TMDE-SP was based on DSCP's decision to incorporate a 74% surcharge on all TMDE procurements. By using DSCP, the U.S. Army Medical Materiel Agency's (USAMMA) purchasing power would have been cut by 42%. As a result of using USAMRAA, USAMMA was able to realize savings of \$1,809,084 in TMDE-SP procurements alone. See Chart 1 for cost comparison of equipment item by procurement source.

In addition to filling the TMDE-SP shortages to the deploying medical forces, it was also necessary for USAMMA to procure specific legacy medical equipment items to be included in the Agency's Medical Standby Equipment Program (MEDSTEP) to support medical logistics operations in theater. Again, DSCP announced it's intent to add a 74% surcharge on the MEDSTEP items the Maintenance Engineering and Operation Directorate identified for the program so once again the decision was made to utilize USAMRAA rather than DSCP to procure the legacy MEDSTEP assets. Utilizing DSCP would have again resulted in the diminishment of USAMMA's buying power by 42%. As a result of utilizing USAMRAA, USAMMA was able capitalize a savings of \$240,209 in MEDSTEP procurements. See Chart 2 for cost comparisons for MEDSTEP items by procurement source. By using USAMRAA instead of DSCP for ordering TMDE and MEDSTEP equipment, USAMMA was able to capitalize a total savings in excess of \$2,000,000.

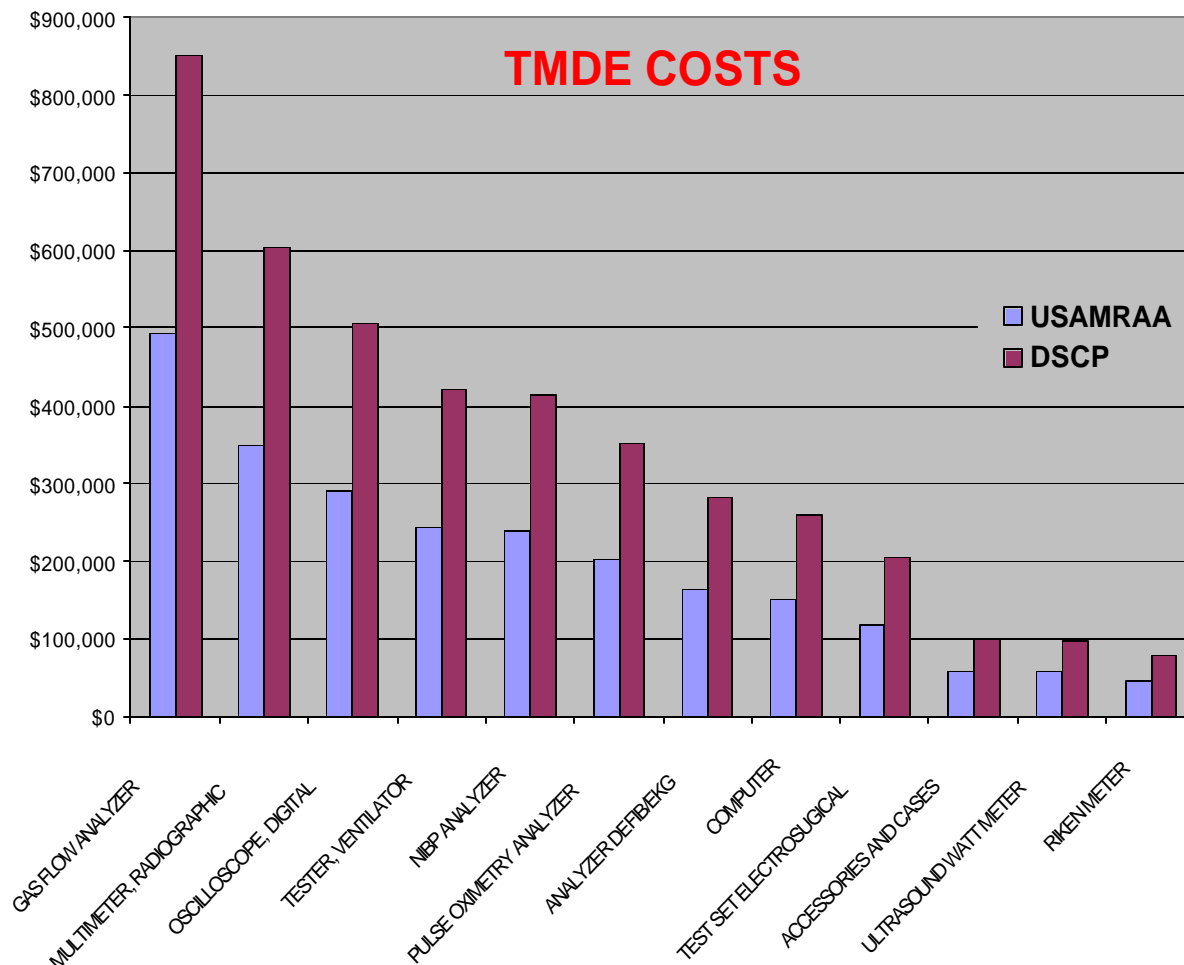


Chart 1. Cost comparison for procuring Test, Measurement, and Diagnostic Equipment (TMDE) between the U.S. Army Medical Research Acquisition Activity or Defense Supply Center Philadelphia.

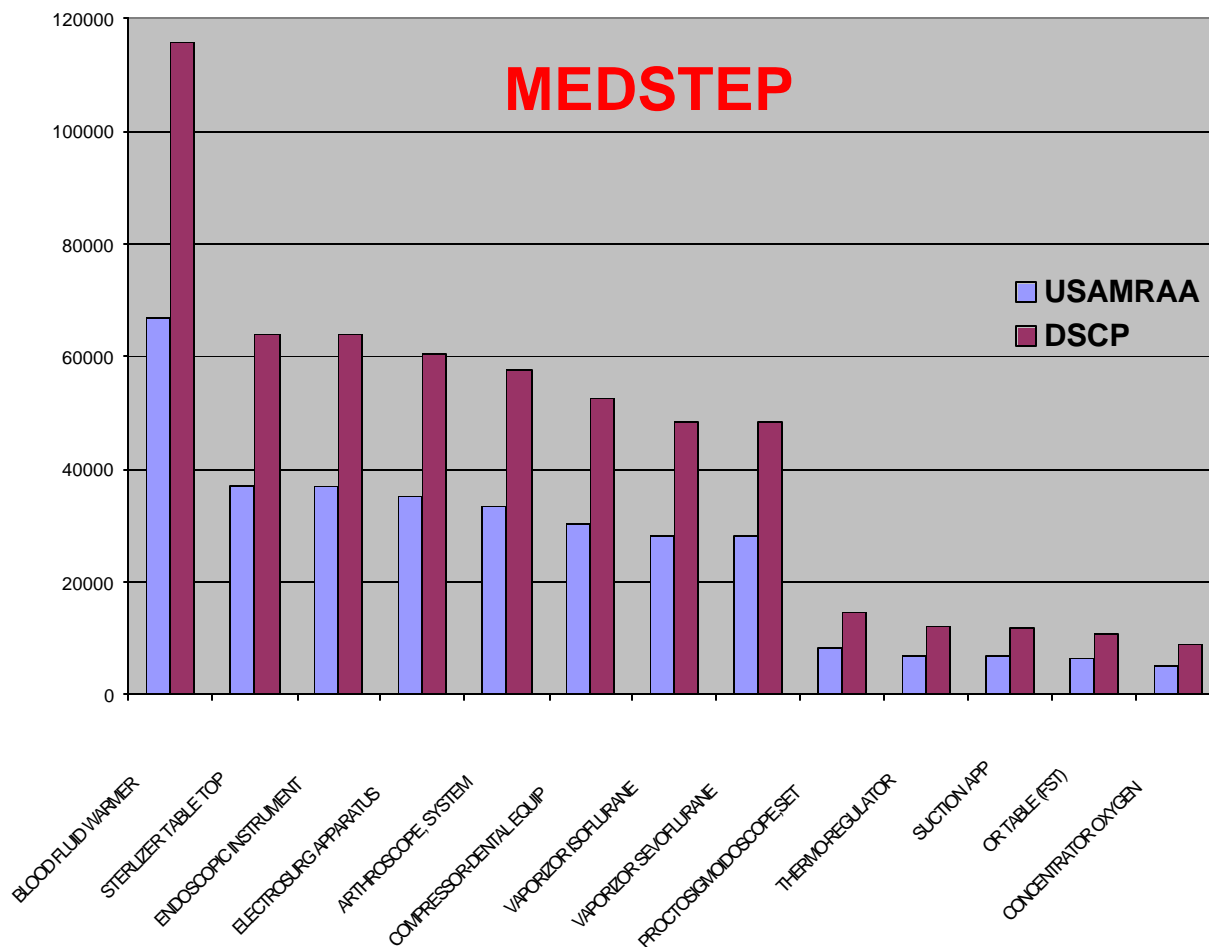


Chart 2. Cost comparison between using the U. S. Army Medical Research Acquisition Activity and Defense Supply Center Philadelphia for procuring legacy equipment for the MEDSTEP program.

With the implementation of the Forces Command (FORSCOM) Hospital Optimization Standardization Program (HOSP) initiative, it is imperative that the 164 Bed, Hospital Company associated with each Combat Support Hospitals be routinely serviced and maintained in a fully mission capable posture. Cost estimates to support the required annual scheduled services maintenance program were calculated and provided to the FORSCOM. These estimates are based on the maintenance man-hours required to perform preventive maintenance, calibration, and electrical safety, as well as minor repairs of the medical equipment densities to be placed in storage at Sierra Army Depot. The estimates include anticipated maintenance kits and parts, and the TDY costs associated with the medical equipment repairers traveling to Sierra Army Depot, being on location for the duration of time necessary to complete each hospital, and returning to the soldiers home station. The following table depicts the estimated costs.

Table 1. Annualized estimate of maintenance costs for a 164 Bed Hospital Company

Unit Description	PM Kits	Repair Parts	TDY COSTS							Total per SRC	QTY	Annual Cost
			Days	91A	Per Diem	Lodging	Car Rental	Air Fare	Total			
HOSP CO, 164 BED, NSB	\$15,000	\$15,000	19	8	\$6,013	\$9,019	\$4,228	\$5,600	\$24,859	\$54,859	3	\$164,578
HOSP CO, 164 BED, CORPS	\$15,000	\$15,000	19	10	\$7,564	\$11,345	\$5,673	\$7,000	\$31,582	\$61,582	6	\$369,491
Total Annual Cost												\$534,069

TDY PLANNING FACTORS		
Per Diem/Person/Day	\$40	Car Rental with Fuel per day, per 3 Persons \$75
Lodging/Day per Person	\$60	Air Fare with Taxi per person \$700

The recent addition of “medical” Line Item Numbers (LINs) to the Army’s Training Resource Model (TRM) was recognized as a method to ensure that the medical organizations within the TOE Army receive the appropriate funding associated with annual training requirements to include the related unit level maintenance and sustainment. At present, the only medical LINs documented in the TRM are for Medical Equipment Sets (MES) and Dental Equipment Sets (DES). This ensures some funding is acknowledged for the Division level Medical Companies and some of the Corps level medical support organizations, however the training and sustainment dollars to support the Combat Support Hospitals are not currently in the TRM. The following table depicts a break-out of funding requirements identified in the TRM for TOE medical units.

Table 2. Funding requirements in the Training Resource Model for TOE medical units

Unit Description	Medical Equipment Value / SRC	TRM Analysis / SRC	# of Units	TOTAL Property Value	TRM Funds Programmed	Average TRM Funds Programmed per Unit	% of Property Value Invested in Up-Keep
Divisional Medical Companies	\$496,511	\$8,006	29	\$13,798,389	\$232,093	\$8,003	1.68%
Miscellaneous Support Units	\$210,854	\$690	98	\$22,506,442	\$164,274	\$1,676	0.73%
Dental	\$777,347	\$5,888	10	\$8,187,988	\$63,134	\$6,313	0.77%
Combat Support Hospital	\$4,700,736	\$0	9	\$42,602,615	\$0	\$0	0.00%
				\$87,095,434	\$459,501	\$15,993	0.58%

Note: The lack of funding associated with the CSH is very significant. It was FORSCOM’s intent to fund the HOSP initiative with TRM dollars.

Sample Data Collection Monthly Report May 2003



**Submitted to:
U.S. Army Medical Materiel Agency
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland**



Prepared by:
Information Systems Support Inc.
Robert Zak MS
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Report # 016

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Introduction: The U.S. Army Medical Material Agency (USAMMA) serves as the Army Medical Department's (AMEDD) strategic level medical logistics organization. USAMMA's mission is to enhance the medical material readiness throughout the full range of military health service support missions worldwide. In this role USAMMA develops and implements innovative logistics concepts and technologies as well as promoting military and medical logistics information and knowledge.

The agency's core skills and technologies center on conducting life cycle management for commercial and non-developmental items, sustaining and modernizing the medical force, supporting exercises and contingency operations and disseminating medical logistics information and knowledge. Two of USAMMA's critical groups tasked with this mission are the Maintenance Engineering Operations Directorate (MEOD) and the Technology Support Division (TSD). The MEOD is responsible for the maintenance of all the medical equipment while the TSD is responsible for ensuring the medical technology is sustainable and meets current and future utilization requirements.

In order to enhance the strengths of MEOD and TSD, USAMMA has contracted, (contract # DAMD17-01-D-0004), with McAdams Technologies Inc., (subcontracted to Information Systems Support Inc. March 2001), to develop and implement a sample data collection program for targeted medical devices. The overall focus of this program is to assist USAMMA in supplying medical field equipment, and DEPMEDS facilities with current, and sustainable medical technology in a fiscally efficient manner.

Scope: This document, the sixteenth Sample Data Collection (SDC) report, includes information obtained during an SDC survey and technology assessment of the 106th Medical Detachment (Veterinary Services) and 129th Medical Detachment (Veterinary Medicine), Yongsan Army Garrison, Seoul, South Korea. Also included is a report on an assessment of the medical equipment deficiencies reported by the Medical Logistics Support Team (MLST) as a result of the hand-off of the Pre-Positioned Afloat (Gibson) Combat Support Hospital.

Technology Support Issues

The following equipment and technology issues were addressed during May.

Report on Visit to 106th Medical Detachment (Veterinary Services)

SUBJECT: Trip Report for SDC Visit to 106th Medical Detachment (Veterinary Services), Yongsan Army Garrison, Seoul, Korea. 18-23 May, 2003.

**UNITED STATES ARMY MEDICAL MATERIEL AGENCY
SAMPLE DATA COLLECTION**

106th MEDICAL DETACHMENT (VETERINARY SERVICES)

129th MEDICAL DETACHMENT (VETERINARY MEDICINE)

SUMMARY: The 106th Medical Detachment (VS), Yongsan Army Garrison, Korea, requested a Sample Data Collection (SDC) survey by the United States Army Medical Materiel Agency (USAMMA) from 19 May to 23 May 2003. The purpose of the visit was to assess the current conditions of the equipment, evaluate life of technology, determine its effective utilization, and collect information on equipment performance and what equipment should be included to improve the Unit Assemblages (UAs).

During the visit, the following individuals were interviewed:

Colonel Dewayne Taylor, Commander, 106th Medical Detachment (VS)

Major Randall Thompson, Commander, 129th Medical Detachment (VM)

Major Heather Serwon, OIC Veterinary Clinic

SFC Albert Coates, Detachment Sergeant

SGT Elizabeth Hensley, NCOIC Veterinary Clinic

ISSUE:

Field anesthesia unit, 885 A (see Figure 1), is too heavy and cumbersome to set up. Also, it was developed for use on humans so must be adapted for veterinary use. The vaporizer, which is not anesthetic agent specific, is adequate although it requires roughly 5 bottles of anesthetic agent to just reach the lowest fill line of the vaporizer. It also doesn't work well if the ambient temperature is too hot or cold. The detachment has no environmental control units (ECU) but cannot use the fuel heaters during surgery. Currently, the veterinarians are familiar with and use isoflurane as their anesthetizing agent. Sevoflurane is also a possible future anesthetizing agent in the veterinary field. A lighter, more mobile, veterinary-specific unit might be a better fit.



Figure 1. 885A Field Anesthesia Unit



Figure 2. VMC Anesthesia Machine

RECOMMENDATION:

Determine if an animal-specific anesthesia system may be more appropriate for deployment purposes. A smaller, simpler, lighter unit could possibly be easier to maintain and repair. Figure 2 is a picture of a veterinary-specific anesthesia unit with an isoflurane vaporizer.

ISSUE:

The tables included in the UA for field use are heavy with folding metal legs and a wood-core top covered in stainless steel. They perform double-duty as both exam and surgical tables. However, they are not long enough to properly position a military working dog for surgery. A recommendation from Detachment personnel was to look at using the stands currently used by the Forward Surgical Teams (FST). The FST stand would need two items to make it work better, a pressure washer to assist in cleaning the stretchers after each case and a V-shaped thoracic positioner. The positioner, an example is shown in Figure 3, would help support the canine properly during treatment. They are available in several sizes to accommodate different sizes of animals.

RECOMMENDATION:

Look into the feasibility of using the FST surgical stands in place of the exam tables currently being used.

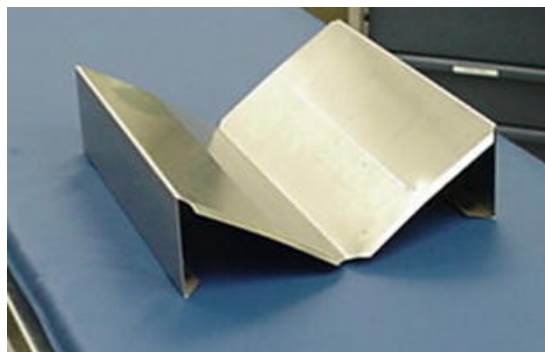


Figure 3. Thoracic positioner

ISSUE:

The portable kennels are too heavy and cumbersome so they are difficult to transport and set up. The detachment has reduced the number they deploy with from 10 to 4. The kennels also have lots of pinch points during the set up. Also, in cold weather, the cages are too cold to put the military working dogs in. There was a recommendation from the Commander of the 129th Medical Detachment to make the kennels chemically hardened.

RECOMMENDATION:

Identify portable kennels that are easier to set up and lighter to transport.

ISSUE:

Results from the Abaxis Piccolo portable blood analyzer, as shown in Figure 4, must be recalculated for use with dogs. The veterinary clinic takes care of animals other than dogs but the Piccolo can't do analysis of cats or other animal blood. Both IDEXX and Heska have veterinary specific blood analyzers. Abaxis does market a unit called a VetScan that is animal specific, shown in Figure 5. The Piccolo and VetScan are very similar internally so it appears possible to use the same repair parts on both. Differences are in the test rotors and the software programs.



Figure 4. Abaxis Piccolo



Figure 5. Abaxis VetScan

RECOMMENDATION:

Look into the feasibility of outfitting veterinary detachments with veterinary-specific equipment that is readily available.

ISSUE:

When ordering expendable supplies through Prime Vendor, there normally is a minimum order quantity. For the clinic, the minimum order quantity usually exceeds the needs of the detachment so there is a lot of waste when they expire.

RECOMMENDATION:

See if it's possible to get lower minimum order quantities through Prime Vendor sources or pool orders with other veterinary detachments, if feasible, to take advantage of Prime Vendor but not waste supplies.

ISSUE:

The clinic has experienced receiving substitutions of human medications in place of the veterinary versions they ordered. Usually the dosage is twice as strong in animals but when substituted, usually the substitute is only half the required dosage, which is not a good practice.

RECOMMENDATION:

Determine how to requisition medications without substitution.

ISSUE:

There was a Bair Hugger Patient Warmer in the clinic but it is not a part of the TOE unit. There is no way to maintain a dog's body temperature so the Bair Hugger would be a welcomed addition. There are approximately 10 different sizes of blankets available for use with the Bair Hugger so a suitable size for use with animals should be available. There was also a Gaymar water-heating blanket in their inventory. UAs 1901, 1905, and 1912 all have a need for a patient warming device. Figure 6 is a picture of the Bair Hugger the detachment has on hand.



Figure 6. Bair Hugger Patient Warmer

ISSUE:

The Microhematocrit reader, 6640-00-585-1378 is a large, bulky metal wheel that costs \$85.00 each. There is a card-type hematocrit tube reader through J. A. Webster, P/N 210175, NSN 6640-01-484-2031, which would be easier to carry and costs only \$9.95 each. It can be used for reading any 75mm capillary tube. If the capillary tubes can be standardized to the 75mm size, this can potentially be a suitable substitute.

RECOMMENDATION:

The capillary tubes in two of the veterinary UAs (1901 and 1905) are the 75mm version. If this capillary tube size is the standard, replace the universal reader with the card-type reader. This would be both a cost and weight reduction.

ISSUE:

There appears to be a very limited need for the food inspection kits for meat slaughtered in the local area. Although food for our soldiers may be shipped in, a comment was made that these kits would still be necessary in the event of humanitarian missions, although the number of kits required may be able to be reduced.

RECOMMENDATION:

Have next veterinary review board determine the need for the current allowance and makeup of the food inspection sets for inspecting in-country slaughtered meat. One reserve detachment had an allowance for six sets (one for each squadron) but they were never used during their deployment.

ISSUE:

Thermopol solid-state refrigerators, as show in Figure 7, have too small of a capacity for vaccines. They are also too expensive to replace for their size. The detachment currently has three broken units that cost \$12,000 each but the detachment doesn't have funding to replace them.



Figure 7. Thermopol Solid-State Refrigerator

RECOMMENDATION:

The detachment needs more traditional refrigerators with more storage capacity than the Thermopol units provide.

ISSUE:

Current illumination in tents not sufficient. Would like Bruce light sets for illumination. The inclusion of five sets of the lights will provide enough lighting for up to 10 tents. Figure 8 shows one set of lights

RECOMMENDATION:

Investigate adding lights to augment current tent lighting.

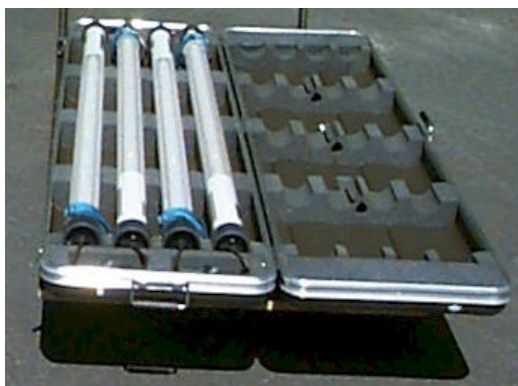


Figure 8: Fluorescent light set

ISSUE:

There is an allowance for an electrosurgical unit (ESU) in the 1905 set but they don't have any on hand. The veterinary surgeon would like to have one available. Although scalpels work fine for cutting, the need for the ESU is in providing a method of hemostasis.

RECOMMENDATION:

Identify the shortage and order appropriate allowance.

ISSUE:

Animal fur clippers with an assortment of blade attachments is essential. However, the clippers that are supplied in the UA are not compatible with the blade sets in the UA. For this detachment, the clippers had a tongue-type interface while the blade sets are screw-on, rendering them unusable.

RECOMMENDATION:

Physically inspect the clippers and blade attachments procured for the UA. Match them up with their essential characteristics. Check to see if they fit or not. Make changes to the ordering process to insure proper blade attachments are purchased.

ISSUE:

The MDT Castle sterilizer in the clinic breaks all the time and the capacity is too small for large packs. A suggested replacement for the Castle sterilizer is Tuttnauer Electronic Autoclave with a 10" x 18.7" chamber size. Part number is 2540EA with NSN 6530-01-501-1012. The chamber is larger than the existing so it could accommodate larger instruments common to veterinary detachments.

RECOMMENDATION:

Recommend purchasing a standardized replacement sterilizer such as the Harvey model MC8, NSN 6530-01-431-6564 or MC10, NSN 6530-01-434-3273.

ISSUE:

There was a concern from the detachment that there seems to be a lot of redundancy in the various UAs. Each UA includes instruments and supplies so it can stand alone to do its intended job. However, when several UAs are assigned to a detachment, there is a lot of unnecessary redundancy so the detachment has to either carry the excess items with them or take the time to sort through the inventory and omit the redundancy.

RECOMMENDATION:

Review which UAs are most commonly fielded together, determine the redundancy in equipment and instruments, and decide if the redundancy can be reduced in future sets.

ISSUE:

The commander of the 106th Medical Detachment (VS) said their allowance for two (2) 10kW generators is too much power. The detachment seldom sets up the whole assemblage and one generator is plenty for their needs. If the generators are the detachment's only power production in the field, the redundant power source is necessary should one require maintenance. However, if the current generator were too large for the actual need, smaller capacity generators would make future deployments easier while still meeting their needs.

RECOMMENDATION:

Determine if current generator size is still valid. Smaller generators may be the solution but may not be feasible once maintenance and repair and standardization is taken into account. Although current missions haven't required the deployment of full assemblages, that doesn't mean future missions won't.

ISSUE:

Due to the lack of an environmental control unit (ECU), the Detachment is unable to provide heat when oxygen is in use so surgical procedures in cold weather is difficult. The detachment has fuel-fired boilers that cannot be operated when oxygen is in use.

RECOMMENDATION:

Provide capability for heating an oxygen-enriched environment (without an open flame). The commander of the detachment recommended a DRASH unit would be a useful addition to the veterinary detachment. Figure 9 shows one configuration.



Figure 9. DRASH ECU, Generator and Trailer

ISSUE:

The detachment had 6 general purpose medium and 1 general purpose small tents. These are being changed to 8 RFAB units but the detachment feels it more accurately requires 15. In the current configuration, there is no place to recover patients and no place for staff to eat meals.

RECOMMENDATION:

Review shelter requirements of the veterinary detachments to determine if necessary functions were overlooked or were supposed to be covered by other means that didn't materialize.

ISSUE:

There appear to be two potential human factor flaws with the Air Force stretcher. The distance from the poles to the ground is too close. The skids on the bottom of the stretcher are shorter than the canvas stretcher so, in a low crawl, it puts more pressure on the arm. It's also tougher to set up than the canvas stretcher especially if you are trying to open it while lying down.

RECOMMENDATION:

This should be reviewed by the next veterinary review panel for human factors issues and impact on the mission.

ISSUE:

Although the Otoscope and Ophthalmoscope set with rechargeable batteries, as shown in Figure 10 functions fine, the set requires a selection of veterinary-specific ear specula because the ear canal of a dog is longer than in humans.



Figure 10. Otoscope and Ophthalmoscope Set

RECOMMENDATION:

Include a variety of animal-specific ear specula with the otoscopes.

ISSUE:

There is an ever-increasing amount of medical reference material made available on either compact disk (CD) or through the Internet. Having this information available would lower the shipping requirements since hardcopies of medical reference books wouldn't have to be shipped with the detachments.

RECOMMENDATION:

Include an allowance for a computer with CD-ROM reading capability and a printer for each squad.

ISSUE:

Telemedicine is desired in order to collaborate with other veterinarians on proper diagnoses and procedures.

RECOMMENDATION:

Determine the feasibility of including telemedicine capabilities in veterinary detachments.

ISSUE:

There was an authorization for a vacuum cleaner but there was none on hand. There is a need for a wet/dry vacuum in the detachment for cleaning up the operating area after a case.

RECOMMENDATION:

Identify shortages and order.

ISSUE:

When using a blood hemocytometer, there is no way to do a complete blood count (CBC). The A^CT 10 by Beckman Coulter is the hematology analyzer being fielded however; it does not do veterinary applications.

RECOMMENDATION:

Determine a suitable hematology analyzer that can perform a CBC in veterinary applications.

ISSUE:

The ProPac 206EL with pulse oximetry is an appropriate vital signs monitor but it requires pediatric blood pressure cuffs for the dogs rather than the adult size. Also, EKG leads should be universal EKG leads with esophageal probe for monitoring dogs under anesthesia. Figure 11 is a picture of a Propaq 206 EL. Welch Allyn does not make an esophageal probe. If an esophageal probe is a requirement, another brand of vital signs monitor having this option would have to be procured.



Figure 11. Propaq Vital Signs Monitor

RECOMMENDATION:

Order child size, Non-Invasive Blood Pressure (NIBP) cuffs with a part number of 008-0011-98, NSN 6515-01-418-6938.

ISSUE:

An esophageal stethoscope should be part of a veterinary UA. A suggested item is the monaural esophageal stethoscope with rubber earpiece. They are available in two sizes. J A Webster Part Number 8132 is for a 12Fr x 42" size at a cost of \$32.45 each or Part Number 8134 for the 18Fr x 42" size at a cost of \$32.45 each.

RECOMMENDATION:

During next review determine if an esophageal stethoscope should be included as a part of a veterinary set.

FOR INFORMATION ONLY:

The detachment is in the process of turning in their daylight darkroom and Porta-Ray portable x-ray unit. They have a Min X-ray system as a replacement for the Porta-Ray and it is functioning fine as well as an OREX CR reader in place of wet film processing.

FOR INFORMATION ONLY:

The question was asked whether a Veterinary Detachment could be co-located with a CSH or some other TOE unit rather than be located on its own.

FOR INFORMATION ONLY:

The oxygen concentrators from the Airsep Corporation work well and are a welcomed piece of equipment.

FOR INFORMATION ONLY:

Detachment members stated funding not adequate to maintain all potency and dated items (Ps and Ds) of the Class 8 drugs.

MEOD Issues

The following maintenance issues were addressed during May.

Maintenance Sustainment Equipment Failure Rates

An assessment of the medical equipment deficiencies reported by the Medical Logistics Support Team (MLST) as a result of the hand-off of the Pre-positioned Afloat (Gibson) CSH revealed that there may be systemic problems with specific types of equipment. Table 1 depicts the types and quantities of medical equipment items that were identified as Non-Mission Capable (NMC). Additionally the failure rate identifies the proportion of the equipment that was NMC.

Table 1. List of Non-Mission Capable (NMC) Medical Equipment

NSN	Nomenclature	Model	Manufacturer	Qty of Failed Items	Failure Rate
6640012580006	SHAKING MACHINE LABORATORY	G560 VORTEX GENIE 2	SCIENTIFIC INDUSTRIES	3	100.0%
6530012544135	CLEANER ULTRASONIC 18GAL	MSC-900T	SONICOR INSTRUMENT	3	75.0%
6520013335961	DENTAL OPERATING AND TREATMENT UNIT	030657 (FUS 366)	DEFIANCE ELECTRONICS	2	66.7%
6520011256618	TESTER PULP DENTAL DC DIGITAL READOUT	PT# 29023	KERR CORPORATION	1	50.0%
6520001817349	CHAIR AND STOOL UNIT: DENTAL OPERATING	CM-185	DEN-TAL-EZ	1	33.3%
6515014341999	BLOOD FLUID WARMER & PRESSURE INFUSION	SYSTEM 1000	QUALITY FOAM DESIGNS	2	25.0%
6640014462597	INCUBATOR BIOLOGICAL	VERIFY	STERIS	1	25.0%
6530014640267	VENTILATOR VOLUME PTBL	754M	IMPACT INSTRUMENTATION	12	23.1%
6515014571840	ANESTHESIA APPARATUS	NARKOMED M	DRAEGER MEDICAL	1	12.5%
6515014322707	MONITOR PATIENT VITAL	206EL W/SP02	WELCH ALLYN PROTOCOL	8	11.1%
6515014466766	OXIMETER PULSE	BCI 3303	SIMS BCI	1	4.5%
6520001391246	COMPRESSOR - DEHYDRATOR DENTAL	M5B	AIR TECHNIQUES	1	3.6%
6515012861010	LARYNGOSCOPE SET, FIBER OPTIC	199176	PROPPER MFG CO	1	2.6%
6515014350050	SUCTION APPARATUS SURG PROGRAMMABLE	326/M	IMPACT	2	2.2%

Ten of the fourteen types of medical equipment with identified defects or malfunctions had a failure rate in excess of ten percent. These types of equipment with excessive failure rates should be further analyzed to determine if these deficiencies are a result of inadequate environmentally controlled storage conditions, poor manufacturing, or anticipate failure based on the equipment type or category.

Sample Data Collection Monthly Report June 2003



**Submitted to:
U.S. Army Medical Materiel Agency
U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland**



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Robert Zak MS
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Report # 017

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Introduction: The U.S. Army Medical Material Agency (USAMMA) serves as the Army Medical Department's (AMEDD) strategic level medical logistics organization. USAMMA's mission is to enhance the medical material readiness throughout the full range of military health service support missions worldwide. In this role USAMMA develops and implements innovative logistics concepts and technologies as well as promoting military and medical logistics information and knowledge.

The agency's core skills and technologies center on conducting life cycle management for commercial and non-developmental items, sustaining and modernizing the medical force, supporting exercises and contingency operations and disseminating medical logistics information and knowledge. Two of USAMMA's critical groups tasked with this mission are the Maintenance Engineering Operations Directorate (MEOD) and the Technology Support Division (TSD). The MEOD is responsible for the maintenance of all the medical equipment while the TSD is responsible for ensuring the medical technology is sustainable and meets current and future utilization requirements.

In order to enhance the strengths of MEOD and TSD, USAMMA has contracted, (contract # DAMD17-01-D-0004), with McAdams Technologies Inc., (subcontracted to Information Systems Support Inc. March 2001), to develop and implement a sample data collection program for targeted medical devices. The overall focus of this program is to assist USAMMA in supplying medical field equipment, and DEPMEDS facilities with current, and sustainable medical technology in a fiscally efficient manner.

Scope: This document, the seventeenth Sample Data Collection (SDC) report, includes current information on a number of equipment items required to fill mission requirements. Also included is a review of maintenance significant medical equipment as well as medical maintenance manpower requirements for support of Set-the-Force agenda.

Technology Support Issues

The following equipment and technology issues were addressed during June.

Cooper Surgical, Medasonics, Part Number 101-0011-030, Versatone Model 8B Perioperative Doppler System, NSN 6515-01-293-5578

A requirement existed for perioperative dopplers. However, there was some confusion of what was included with the NSN when ordered and what, if other, accessories may have to be ordered for it to function properly. A Cooper Surgical representative acknowledged the unit, as ordered, required one of four optional probes to function properly. The type of probe required depended on its use. The manufacturer's representative looked at the previous year's worth of military-specific orders and found all of the doppler units were ordered with the P82, 8 Megahertz pencil-style probe. Figure 1 is a picture of the unit while Figures 2 through 5 show the available probes.



Fig. 1. Versatone Model 8B Perioperative Doppler



Fig. 2. 8 Megahertz P82 Pencil Style Probe



Figure 3. 2.4 Megahertz P81 Probe



Figure 4. 8 Megahertz P83 2.5cm pencil



Figure 5. 5.3 Megahertz P84 Probe

The MedaSonics® Versatone® Perioperative Doppler is a standard for many surgical suites.

- Detect air emboli during surgery where significant gravitation gradient exists between the heart and the operating site.
- Assess vessel patency or monitor and evaluate blood flow at surgical site.
- Obtain systolic blood pressure measurements during surgery.
- Flexible design allows for one Doppler and multiple probe frequencies.

Table 1. Ordering information for the ultrasonic doppler and probe options

Nomenclature	Manufacturer	Model	NSN	Price
Ultrasonic Doppler	CooperSurgical	101-0011-030 (Model D8)	6515-01-293-5578	\$2995.00
8MHz Pencil Style Probe	CooperSurgical	101-0013-010 (Model P82)	6515-01-491-6202	\$1095.00
2.4 MHz Probe	CooperSurgical	101-0012-010 (Model P81)	None assigned	\$1295.00
8 MHz 2.5 cm Probe	CooperSurgical	101-0014-010 (Model P83)	None assigned	\$1095.00
5.3 MHz probe	CooperSurgical	101-0015-010 (Model P84)	None assigned	\$1095.00

Olympus America, Model OSF-3, Flexible Fiberoptic Sigmoidoscope, NSN 6515-01-504-1096



A requirement for a flexible sigmoidoscope identified the Olympus America model OSF-3 as a current and available item. It's used for endoscopy and endoscopic surgery in the lower digestive tract, including the rectum and sigmoid colon. The OSF-3 has a slim distal end to ease insertion. It has the following features, 700mm working length facilitates complete insertion, generous 3.2mm instrument channel accommodates a wide variety of accessories, increased resolution delivers clear images, complete immersion allows for complete cleaning and disinfecting, optional adapter will provide CO2 compatibility.

Fig. 6. Olympus Flexible Sigmoidoscope

Marvel Scientific, Part Number 61RF0600 (6CRF0600), Refrigerator-Freezer, NSN 4110-01-425-8009

A requirement for a refrigerator/freezer can be filled by the Marvel Scientific model 6CRF0600 refrigerator/freezer. It has a six cubic foot under counter refrigerator/freezer that fits easily under lab benches and casework. Forced air ventilation eliminates need for clearance space in built-in applications. The unit has manual defrost, 5.3 cubic foot refrigerator capacity and .7 cubic foot freezer capacity. Dual voltage capable, carrying handles and olive drab paint scheme. Figure 7 is the commercial version of the refrigerator.

Fig. 7. Marvel model 6CRF Refrigerator/Freezer

Synthes, Part Number 115.04, Instrument and Implant Set, Mini Fragment, Orthopedic Set, NSN 6515-01-384-9030

Orthopedic mini-fragmentation instrument and implant set. Basic set for low contact-dynamic compression plate (LC-DCP) and dynamic compression plate (DCP) surgery. Table 2 lists the parts making up the set.

Table 2. Basic instrument set for LC-DCP and DCP procedures, P/N 115.04

Basic Instrument Set for LC-DCP and DCP Part Number 115.04						
Part	Component	Qty	U/M	Note	Unit Amount	Extended Amount
292.20	2.0MM KIRSCHNER WIRE W/TROCAR POINT 150MM	1	TP	P	59.00	59.00
304.000	BASIC INSTRUMENT SET F/LC-DCP & DCP - GRAPHIC CASE	1	EA	*	562.00	562.00
310.19	2.0MM DRILL BIT/QC/100MM	2	EA		46.50	93.00
310.31	3.2MM DRILL BIT/QC/145MM	3	EA	*	46.25	138.75
310.44	4.5MM DRILL BIT/QC/145MM	2	EA		46.25	92.50
310.99	COUNTERSINK FOR 4.5MM CORTEX SCREWS	1	EA		144.00	144.00
311.44	T-HANDLE WITH QUICK COUPLING	1	EA	*	218.00	218.00
311.46	TAP FOR 4.5MM CORTEX/SHAFT SCREWS 130MM/57MM TAP DEPTH	3	EA	*	76.50	229.50
311.66	TAP FOR 6.5MM CANCELLOUS BONE SCREWS 197MM/150MM CALIBRATION	1	EA		160.00	160.00
312.46	4.5MM/3.2MM DOUBLE DRILL SLEEVE	1	EA	*	241.00	241.00
312.48	4.5MM/3.2MM INSERT DRILL SLEEVE	1	EA	*	82.00	82.00
312.67	6.5MM/3.2MM DOUBLE DRILL SLEEVE	1	EA	*	241.00	241.00
314.11	HOLDING SLEEVE	1	EA		229.00	229.00
314.15	LARGE HEXAGONAL SCREWDRIVER SHAFT	1	EA		37.75	37.75
314.27	LARGE HEXAGONAL SCREWDRIVER	1	EA	*	147.00	147.00
319.10	DEPTH GAUGE FOR LARGE SCREWS	1	EA	*	415.00	415.00
319.39	SHARP HOOK	1	EA		58.00	58.00
321.12	ARTICULATED TENSION DEVICE WITH GAUGE - SPAN 20MM	1	EA		538.00	538.00
321.15	SOCKET WRENCH-11MM WIDTH ACROSS FLATS	1	EA		254.00	254.00
321.16	COMBINATION WRENCH-11MM WIDTH ACROSS FLATS	1	EA		195.00	195.00
322.44	4.5MM DCP - DRILL GUIDE NEUTRAL & LOAD	1	EA	*	410.00	410.00
323.45	4.5MM LC-DCP - DRILL GUIDE NEUTRAL & LOAD	1	EA	*	407.00	407.00
323.46	4.5MM UNIVERSAL DRILL GUIDE	1	EA		294.00	294.00

329.92	BENDING TEMPLATE 12 HOLES FOR 4.5MM LC-DCP- & DCP- PLATES	1	EA			23.00	23.00
329.97	BENDING TEMPLATE 7 HOLES FOR 4.5MM LC-DCP- & DCP- PLATES	1	EA			23.00	23.00
329.99	BENDING TEMPLATE 9 HOLES FOR 4.5MM LC-DCP- & DCP- PLATES	1	EA			23.00	23.00
492.20	2.0MM TI KIRSCHNER WIRE 150MM	1	TP	P		68.00	68.00

Synthes, Part Number 115.96C, (Discontinued and replaced by P/N 115.720) Large External Fixator Set with Self Drilling Schanz Screws, NSN of discontinued part number is 6515-01-424-6249

A requirement to purchase a large external fixator set with self drilling Schanz screws identified the original requirement, Synthes part number 115.96C, has been discontinued and replaced by part number 115.720. The set consists of the following components shown in Table 3.

Table 3. Large external fixator set with self-drilling Schanz screws, P/N 115.720

Large External Fixator Set with Self-Drilling Schanz Screws Set Part Number 115.720							
Part	Component	Qty	U/M	Note		Unit Amount	Extended Amount
293.74	5.0MM STEINMANN PIN WITH CENTRAL THREAD 200MM	4	EA	P		85.00	340.00
294.56	5.0MM SCHANZ SCREW BLUNTED TROCER POINT 200MM	8	EA	P		66.50	532.00
294.784	5.0MM SELF-DRILLING SCHANZ SCREW 60MM THRD/150MM	4	EA	P		108.00	432.00
294.785	5.0MM SELF-DRILLING SCHANZ SCREW 60MM THRD/175MM	8	EA	P		108.00	864.00
294.786	5.0MM SELF-DRILLING SCHANZ SCREW 80MM THRD/200MM	8	EA	P		108.00	864.00
294.950	6.0MM TRANSFIXATION PIN 225MM	4	EA	P		86.00	344.00
310.37	3.5MM DRILL BIT/QC/195MM	2	EA			78.50	157.00
310.48	4.5MM DRILL BIT/QC/195MM	2	EA			78.00	156.00
321.20	RATCHET WRENCH-11MM WIDTH ACROSS FLATS	2	EA		*	530.00	1,060.00
355.14	CANNULATED SOCKET WRENCH- 11MM WIDTH ACROSS FLATS	1	EA			217.00	217.00
392.951	8.0MM/6.0MM THREADED DRILL SLEEVE-SHORT	1	EA			73.50	73.50
392.952	8.0MM/6.0MM THREADED DRILL SLEEVE-LONG	1	EA			81.50	81.50
392.963	6-POSITION DRILL GUIDE HANDLE	1	EA			169.00	169.00
393.10	UNIVERSAL CHUCK WITH T-HANDLE	1	EA		*	697.00	697.00
393.361	TI TUBE-TO-TUBE CLAMP	2	EA	P		507.00	1,014.00
393.647	COMBINATION CLAMP	12	EA	P		499.00	5,988.00
393.648	DYNAMIZATION CLIP FOR COMBINATION CLAMP	4	EA	P		69.50	278.00
393.66	TRANSVERSE CLAMP	2	EA	P		507.00	1,014.00
393.746	SPLIT TISSUE PROTECTION SLEEVE 5.0MM	1	EA			382.00	382.00
393.751	MULTI-PIN CLAMP	4	EA	P		564.00	2,256.00
393.753	ROD ATTACHMENT FOR MULTI-PIN CLAMP	6	EA	P		303.00	1,818.00
393.755	MULTI-PIN CLAMP 4 POSITION	2	EA	P		526.00	1,052.00
393.76	OPEN COMPRESSOR	2	EA			355.00	710.00
393.978	OPEN ADJUSTABLE CLAMP	8	EA	P		400.00	3,200.00
394.181	3.5MM TROCER-SHORT	1	EA			59.50	59.50
394.182	3.5MM TROCER-LONG	1	EA			59.50	59.50
394.80	11.0MM CARBON FIBER ROD 100MM	4	EA	P		166.00	664.00
394.82	11.0MM CARBON FIBER ROD 150MM	4	EA	P		166.00	664.00
394.83	11.0MM CARBON FIBER ROD 200MM	4	EA	P		166.00	664.00
394.84	11.0MM CARBON FIBER ROD 250MM	4	EA	P		179.00	716.00
394.85	11.0MM CARBON FIBER ROD 300MM	4	EA	P		179.00	716.00
394.86	11.0MM CARBON FIBER ROD 350MM	4	EA	P		179.00	716.00
394.87	11.0MM CARBON FIBER ROD 400MM	4	EA	P		195.00	780.00
394.97	PROTECTIVE CAPS FOR 11.0MM TUBES & CARBON FIBER RODS	1	TP	P		11.00	11.00
394.993	PROTECTIVE CAPS FOR 5.0MM FIXATION PINS	1	TP	P		24.00	24.00
394.994	PROTECTIVE CAPS FOR 6.0MM FIXATION PINS	1	TP	P		24.00	24.00
395.911	DRILL SLEEVE HANDLE	1	EA			143.00	143.00
395.912	5.0MM/3.5MM DRILL SLEEVE-SHORT	1	EA			72.00	72.00
395.913	5.0MM/3.5MM DRILL SLEEVE-LONG	1	EA			72.00	72.00
395.921	6.0MM/5.0MM THREADED DRILL SLEEVE-SHORT	1	EA			83.50	83.50

395.923	6.0MM/5.0MM THREADED DRILL SLEEVE-LONG	1	EA			83.50	83.50
690.315	LARGE EXTERNAL FIXATOR GRAPHIC CASE	1	EA		*	990.00	990.00

Welch Allyn, Part Number 35303, Proctosigmoidoscope, NSN 6515-01-481-0570



The requirement for a rigid sigmoidoscope can be met with the set from Welch Allyn, part number 35303. The rigid sigmoidoscopes come with halogen light for true tissue color and consistent, long-lasting illumination. Fiber optics provide a cool distal ring of light with no reflections, no obstructions. Made from autoclavable stainless steel for convenience and durability. Hinged window with a neoprene seal avoids fogging during insufflation. Graduated tube with removable tip for fiber cleaning. Compatible with available adapters to fit most Welch Allyn power handles. Key components are shown in Table 4.

Fig. 8. Proctosigmoidoscope Set

Table 4. Key components of Welch Allyn pr octosigmoidoscope

15 mm x 15 cm Pediatric Speculum with Obturator
19 mm x 25 cm Standard Sigmoidoscope, Speculum with Obturator
23 mm x 7 cm Fiber Optic Anoscope, Speculum with Obturator
Lught Handle with 3 ft cord
Transformer with 5 foot cord
Insufflation bulb, complete
6 volt Halogen bulb
30 cm Suction Tube (Standard)
Hard Case for Sigmoidoscope Set

Bay Medical, Part Number 8-1053-62, MicroStim PLUS Nerve Stimulator, NSN 6515-01-463-0901

The MicroStim PLUS is a complete muscle relaxant monitor that fits in the palm of your hand. Functions include twitch, 50 and 100 Hz tetanus, automatic train-of-four, and double-burst stimulation. Although small, this unit offers sufficient output to ensure supramaximal stimulation: output current is fully adjustable from 0 to 70 mA. Has an audible indicator that sounds as each stimulus pulse is delivered, enabling direct monitoring of the patient's response. Unit comes complete and ready to use with instruction manual, battery, diagnostic probe, and 6-foot leads with alligator clips. Also included are a ball & hollow pin as well as a 6-foot lead.

Ortho-Clinical Diagnostics, a Johnson & Johnson Company, Catalog Number 813 2086, Vitros 250 Chemistry System, NSN 6630-01-441-5297

The following information was gathered on the Vitros 250 in regards to a specific request from an overseas unit. The VITROS 250 is a flexible system that can meet requirements in multiple environments - small hospitals, backup in large hospitals, clinics and satellite locations. With throughput of up to 250 results per hour, the VITROS 250 offers the same menu (except AcP), features and ease-of-use as the VITROS 950, with a smaller footprint. The VITROS 250 also features on-board dilution, and can be automated or placed in a work cell.



Fig. 9. Ortho Vitros 250 Chemistry System

The following are test types the system was designed for according to characteristics in the UDR: albumin, alcohol, ALKP, ALT, ammonia, amylase, AST, BUN, calcium, carbon dioxide, chloride, cholesterol, cholinesterase, CK, CKMB, conjugated bilirubin, creatinine, CSF glucose, CSF total protein, delta bilirubin, GGT, glucose, HDLC, iron, lactate, LDH, lipase, lithium, magnesium, phosphorus, potassium, salicylate, sodium, theophylline, TIBC, total bilirubin, total protein, triglycerides, unconjugated bilirubin, uric acid. The following were found in the special features section in the characteristics section of the UDR: multi-rate; end point analysis; direct ISE reading, ion specific; dry chemistry technology; immuno rate wash station ; electrolyte reference fluid reservoir; low volume application; new immuno rate assay capabilities: CRP, digoxin, Phenobarbital, phenyloin

Star Dental, Dental Sonic Scaler, current part number 63389 and swivel, part number 61547



Fig. 10. Titan SW Plus Scaler

The new Titan SW Plus (Swivel) scaler feature an improved ergonomic, scalloped handle complemented by a sleek, new look and finish. Available in 2/3 Line or 4-Line backend configurations, these portable air-powered sonic scalers are clinically proven to effectively remove hard calculus deposits and stains. Because the water spray is controlled, patients don't experience the "drowning effect" often associated with deep scaling.

Feature and Benefits

- One convenient scaler and five scaling tips efficiently achieve both sub-gingival and supra-gingival scaling.
- Controlled water spray provides fog-free view and eliminates "drowning."
- Controlled water spray eliminates patient "drowning effect" and provides a fog-free view.
- The Titan SW Plus and Titan Tips are autoclavable or chemiclavable up to 135°C.
- 360° Quick Connect Swivel on the Titan SW Plus reduces tubing drag, lessens hand/elbow strain and improves scaler manipulation.
- Ergonomic scalloped handle eliminates grooves where debris and bacteria are most often harbored, significantly reducing pre-sterilization scrubbing and cleaning preparation time.
- Titan SW Plus Scaler is completely portable and connects to existing air driven hand piece tubing. No extra control boxes or foot controls are necessary.

Fisher Scientific, Part Number 22-252-490 (Becton Dickinson, Clay Adams P/N 420630) Agglutination Viewer, NSN 6640-01-500-8779. Replaces Becton Dickinson, Clay Adams P/N 425384



Fig. 11. Agglutination Viewer

Use for blood typing, cross matching, prothrombin time, Kahn and other agglutinations, flocculation and serodiagnostic tests. Viewer provides a magnified view of the undersurface of test tube contents and permits an easier and more accurate reading than a magnifying lens. Test tube contents are illuminated from above by a 5-w bulb and from below by a magnifying mirror. Complete with bulb and magnifying mirror.

Olympus America, Model LF-2, Tracheal Intubation Fiberscope, NSN 6515-01-397-5258 and CLK-4 Light Source, NSN 6515-01-421-5794



Fig. 12. Olympus LF-2 Fiberscope



Fig. 13. Olympus CLK-4 Light Source

The LF-2 provides exceptional flexibility and maneuverability for a tracheal intubation fiberscope. The LF-2's insertion tube has a combination of flexibility and stiffness for easier insertion and navigation into the trachea and easier placement of endotracheal/endobronchial tubes. A large 1.5mm channel permits improved aspiration of secretions. Incorporating Olympus' advanced optics along with a 90° field of view, the LF-2 provides excellent image quality and visualization to make it easier for you to quickly and successfully perform flexible tracheal intubation.

Features:

- 830mm Total Length with 600mm Working Length
- 90° Field of View
- Direction of View 0° (Forward Viewing)
- 3-55 mm Depth of Field
- Illumination Method by Light Guide System
- 3.8mm Outer Diameter of Distal End
- 4.0mm Outer Diameter of Insertion Tube
- Range of Tip Bending is 120° Up and 120° Down
- 1.5mm Inner Diameter of Suction Channel

Medtronic, Single Chamber External Cardiac Pacemaker, Model 5348, NSN 6515-01-491-4633 (W), NSN 6515-01-463-0725 (L)

The model 5348 temporary pacemaker is designed to be used in conjunction with a cardiac pacing lead system for temporary single-chamber pacing in the clinical environment. There are no known contraindications to the use of temporary pacing as a means to control the heart rate. Model 5348 is designed to deliver high-rate therapy only in the AOO mode. Use in the ventricle could result in life-threatening arrhythmias such as ventricular tachycardia and ventricular fibrillation. A lead with extension cable constitutes a direct, low-resistance current path to the myocardium. During connection and testing procedures only battery-powered instrumentation should be used.



Fig. 14. Single-Chamber
Pacemaker Model 5348

In addition to the pacemaker, there is a need for a pacing lead that can be introduced into a patient in the field without the benefit of fluoroscopy. A balloon flow-assisted electrode catheter would will this requirement. However, Medtronic **does not** sell balloon flow-assisted bipolar electrode catheter. In conjunction with cardiac consultants, it was determined that a 4 French, bipolar electrode would be a good fit. A source for these temporary pacing electrodes is Bard Electrophysiology, whose part number is 008635P.

MEOD Issues

The following maintenance issues were addressed during June.

Maintenance Significant Medical Equipment Review

The Army Medical Department's (AMEDD) National Maintenance Point (NMP), together with the Army Medical Departments Center & School (AMEDD C&S) Medical Equipment Maintenance Representative, reviewed all medical equipment listed as components of Unit Assemblages (UA). The following listed items have been determined to be of significant importance that maintenance tracking requires an Operational Requirements Documents (ORD) be established and a Line Item Number (LIN) be assigned. The assignment of a LIN will enable the Army's maintenance automation systems to track and monitor maintenance related criteria; i.e. Mean Time To Failure, Mean Time To Repair, Medical Maintenance Man-hour requirements to effect scheduled and unscheduled maintenance services, and repair parts requirements over the life cycle of the equipment item (See Table 5).

Table 5. List of Maintenance Significant Medical Equipment

NSN	NOMENCLATURE	ARC	PRICE	MRC
6640014953965	ANALYZER LIQUID SCINTILLATION 264V AC 75WATTS BENCH SPACE 9SQ FT	N	\$20,400.00	F
6680012755394	ANEMOMETER AIR VELOCITY & TEMP FIELD CALIBRATABLE F/6680012769459	N	\$1,396.55	
6515014536496	ANESTHESIA APPARATUS PORTABLE LIGHTWEIGHT SOFT PACK STYLE	N	\$7,500.00	O
6515012065971	ARTHROSCOPE SYSTEM SURGICAL 4MM ABLE TO WITHSTAND STERILIZATION	N	\$4,762.72	O
6515013765164	ASPIRATION UNIT VITRECTOMY OPHTH BTRY PWR FOOTPEDAL AUTOCL PUMP	N	\$2,155.50	O
6670014770576	BALANCE ANALYTICAL 210GRAMS ALUM AB-S SERIES BASIC LEVEL	N	\$3,430.00	O
6670014770614	BALANCE ANALYTICAL 3.05 GRAMS WEIGH CAP MT-TETTLER	N	\$12,034.00	O
6540004941852	BLOCKING UNIT OPHTHALMIC LENS	N	\$11,479.84	O
6515013705019	BLOOD-FLUID WARMER & PRESSURE INFUSION SYSTEM 120V 50/60HZ	N	\$4,696.08	F
6515011737054	BRONCHOSCOPE FIBEROPTIC: FLEXIBLE 5MM	N	\$9,169.92	D
6640014984194	CABINET BIOLOGICAL SAFETY CRS 24"X46"X23.5"	N	\$3,723.00	O
6640014649936	CALIBRATOR BIOS FLOW F/USE IN CALIBRATION OF AIR SAMPLING EQUIP	N	\$1,783.00	O
6640014954051	CENTRIFUGE LABORATORY 8500RPM 50/60HZ 249V AC SINGLE PHASE	N	\$1,525.00	O
6640014644444	CENTRIFUGE BENCHTOP REFRIGERATED MAX SPEED 17000 RPM	N	\$7,637.00	O
6640014990533	CENTRIFUGE LAB 16800 RPM 60 HZ MULTIPURPOSE VENTILATED BENCH	N	\$5,050.00	O
6640012048691	CENTRIFUGE LAB 3400RPM 110/220V 50/60HZ AC 150W 10IN H 8IN DIA	N	\$1,594.34	O
6640012052423	CENTRIFUGE LAB GEN PURPOSE BENCH TOP 4000RPM 120/230V 50/60HZ AC	N	\$1,763.44	O
6640011432055	CENTRIFUGE LAB ROTOR 3400 RPM 110/220V 50/60HZ 150W AC PORTABLE	N	\$947.06	O
6640011701180	CENTRIFUGE LAB TRUNNION 6 PLACE 3000 RPM 110/220V 50/60HZ AC	N	\$1,319.70	O
6640014677234	CENTRIFUGE LABORATORY 120V 60HZ SGL PHASE	N	\$6,000.00	D
6640009309034	CENTRIFUGE LABORATORY 15ML TU 115V 650/60 HZ 12X13.5IN 135 WATTS	N	\$1,478.07	O
6640014470912	CENTRIFUGE LABORATORY 6000 RPM 120V 60 HZ AC SINGLE PHASE	N	\$7,414.00	O
6640010986638	CENTRIFUGE LABORATORY MICRO-HEMATOCRIT 115VOLT 50/60 HZ AC 10"W	N	\$917.00	O
6640010689612	CENTRIFUGE LABORATORY MICROHEMATOCRIT BATTERY POWERED 9 VOLT DC	N	\$1,232.80	O
6640001451180	CENTRIFUGE LABORATORY SMALL 115V 60HZ AC CONICAL SINGLE PHASE	N	\$1,493.82	O

NSN	NOMENCLATURE	ARC	PRICE	MRC
6525013456090	CHAMBER X-RAY FILM PROCESSING DARKROOM PORTABLE	N	\$5,539.41	H
6540012028076	CHILLING UNIT CYLINDER SURFACE OPHTHALMIC LENS 115V 60 HZ AC	N	\$2,415.60	H
6515014939691	COAGULATION SYSTEM IRRIGATING BIPOLAR	N	\$18,067.00	
6515013831052	CONCENTRATOR OXYGEN 1-5 LPM 115V 50/60HZ BUILT-IN ALARMS	N	\$1,111.68	O
6640014674853	CONDENSER LAB EVAPORATION ADJ ROTATION SPEED(5-240RPM)20X15X24IN	N	\$3,730.00	O
6515014940271	CONSOLE INTEGRAL IRRIGATION PUMP 115V E.I. 6515014654385	N	\$4,500.00	
6515014989712	CRANIAL PLATING SYS NEUROSURG 1.9MM BIOPLATE FIXATION	N	\$28,154.00	
6640014623358	CRYOSTAT MICROTOME MICROM 505E CRYOSTAT W/202 MICROTOME	N	\$17,323.00	O
6525014266753	CT AUTO INJECTOR SYSTEM	N	\$11,792.52	O
6515013723150	CUTTER MEMBRANE PEELER SET 120/230V 50/60HZ AC 6X2.75X5.50" CASE	N	\$12,340.06	F
6515013041003	CUTTER-VACUUM ORTHO CAST PORTABLE 120/230V 50/60HZ AC W/ELEC SAW	N	\$3,066.05	O
6525014341985	DARKROOM X-RAY PORTABLE	N	\$8,685.00	O
6525013697178	DARKROOM X-RAY PORTABLE:	N	\$8,685.00	O
6515013595395	DEFIBRILLATOR/MONITOR RECORDER SYS 115/230V 50/60HZ AC/DC W/CASE	N	\$6,802.11	H
6515011828001	DERMATOME BROWN DESIGN 120/230V 50/60HZ AC ELECTRIC TYPE W/CASE	N	\$3,759.57	O
6350014625530	DETECTOR LIGHT INTENSITY BC418 PLASTIC SINTILLATION DETECTOR	N	\$6,929.00	H
6525014668870	DIGITIZER LASER FILM IMPAX TS 5 TRANSMIT/PREVIEW STATION	N	\$43,307.50	F
6540002998108	EDGER HAND OPERATED OPHTHALMIC LENS 115 VOLT 60 HZ AC	N	\$1,486.75	O
6515013141237	ELECTROSURGICAL APPARATUS 120/230V 50/60HZ AC MOBILE SOLID STATE	N	\$3,830.68	O
6515001376511	ELECTROSURGICAL APPARATUS PORTABLE TABLE TYPE 115/230V 50/60HZ	N	\$4,565.70	O
6515012045392	ENDOSCOPIC INSTRUMENT FIBER OPTIC FLEXIBLE 115/230V 50/60HZ AC	N	\$6,281.60	
6515012045360	ENDOSCOPIC INSTRUMENT FIBER OPTIC FLEXIBLE GASTRO-INTESTINAL	N	\$13,026.03	D
6515013975258	FIBERSCOPE TRACHEAL INTUBATION W/LT 110/220V 50/60HZ 4MM OD830MM	N	\$6,500.00	L
6515014246249	FIXATION EXTERNAL ORTHOPEDIC	N	\$16,196.71	O
6515012376085	FIXATION KIT ORAL-MAXILLOFACIAL SURG UNIV OF TENNESSEE DSGN CRS	N	\$2,160.70	B
6515014287086	FLUID TRANSFER SYSTEM OPHTHALMIC VITREORETINAL SURGERY	N	\$4,800.00	O
4110014249408	FREEZER MECHANICAL BLOOD PLASMA 110/230 VOLTS 50/60 HZ 5.4 CU FT	N	\$7,385.72	O
4110014500060	FREEZER MECHANICAL BLOOD PLASMA 24X25X36INCHES MINUS 30 DEG TEMP	N	\$7,385.72	O
4110014607404	FREEZER MECHANICAL ULTRA LOW TEMP RANGE -40DEG TO -86DEG C	N	\$5,803.00	O
4110009123024	FREEZER PORTABLE TOP LOADING 115V 60HZ AC	N	\$3,219.97	O
6520010898282	FURNACE DENT LAB ELEC LG 0-1999 DEG F AUTO TEMP 115V 50-60 HZ	N	\$1,389.60	O
6520011399221	FURNACE DENTAL LAB ELEC 300-2000 DEG F PORTABLE 120V 50/60HZ AC	N	\$745.54	O
6640014676210	GENERATOR HYDROGEN OPER PRESSURE 100POUNDS P/SQ IN 200CC P/MIN	N	\$5,000.00	H
3655014676213	GENERATOR NITROGEN 17X24.6X16" NOMINAL 110/220V 5AMPS	N	\$7,630.00	H
6540014139101	GENERATOR OPHTHALMIC LENS SINGLE PHASE 50/60 HZ 115/230 1150W	N	\$40,000.00	D
6530012082408	HEADREST NEUROSURGICAL SYSTEM ATTACH TO OPERATING TABLE W/BOARD	N	\$10,670.30	O
6640011397783	HOOK LAMINAR FLOW LAB 34"L 59"W 31"H HORIZONTAL FLOW CLASS 100	N	\$4,500.70	O
6515014650751	IMAGE AND ILLUMINATION SYS DELIVERS CLEAR UNIFORM IMAGE	N	\$6,500.00	O

NSN	NOMENCLATURE	ARC	PRICE	MRC
6640011876621	INCUBATOR BACTERIOLOGICAL CO2 DUAL CHAMBER 120/230V50/60HZ AC	N	\$7,787.96	O
6515013849030	INSTRUMENT & IMPLANT SET MINI FRAG ORTHO BASIC LC-DCP AND DCP	N	\$4,062.87	
6515013856088	INSTRUMENT & IMPLANT SET ORTHOPEDIC SURGERY	N	\$8,258.20	
6515011405432	INSTRUMENT & IMPLANT ST ORTHO BASIC SM/LGE BONE FOR JACOBS CHUCK	N	\$1,618.68	B
6545011405431	INSTRUMENT SET ASIF SMALL FRAGMENT AND MINI	N	\$9,131.96	
6515011668996	INSTRUMENT SET INTRAOCULAR MICROSURGICAL SUTHERLAND ROTATABLE	N	\$3,562.01	B
6515011737027	INSTRUMENT SET ORTHOPEDIC PASSIVATED AND HARDENED CRS WITH CASE	N	\$7,290.23	
6540001818037	LENS MEASURING INSTRUMENT OPHTHALMIC 115 VOLT 60 HERTZ AC	N	\$1,099.02	O
6540002998134	LENS MEASURING INSTRUMENT OPHTHALMIC 115 VOLT 60 HZ AC	N	\$3,358.35	H
6515014215793	LENSOMETER OCULAR M	N	\$9,999.00	H
6515011727660	LIGHT ENDOSCOPIC INSTR FIBER OPTIC 120/130V 50/60HZ AC 300WATT	N	\$5,594.18	O
6515011818711	LIGHT ENDOSCOPIC INSTRUMENT 120/240V 50/60HZ PORTABLE FIBER	N	\$11,486.92	O
6540013660909	LIGHT SLIT OPHTHALMIC HAND HELD 25W IN CASE 120/240V 50/60HZ	N	\$3,300.00	F
6540011790076	LIGHT SLIT OPHTHALMOLOGICAL ADJUSTABLE 115/230V 50/60 HZ AC	N	\$7,887.98	F
6515013723149	LIGHT SOURCE FILTERED 120/220V 50/60HZ AC HALOGEN 12X9X5"	N	\$6,884.70	O
6660014660958	METEOROLOGICAL STATION AUTOMATIC SONIC WEATHER STATION	N	\$6,383.00	O
6625014498480	METER NOISE LEVEL 2.75X7.6X1.0IN IMPULSE INTEGRATING SOUND LEVEL	N	\$1,477.73	O
6630012052380	METER TITRATION CHLORIDE 115/230V 50/60HZ AC 50 WATTS 12X8.5X5IN	N	\$2,133.73	O
6640014630068	MICROBIAL IDENTIFICATION SYSTEM AUTOSCAN 4	N	\$53,965.00	O
6650014991784	MICROSCOPE CLINICAL LABORATORY	N	\$5,117.00	O
6650012070829	MICROSCOPE OPTICAL BINOCULAR HISTOPATHOLOGICAL & PATHOLOGICAL	N	\$7,234.12	H
6650012593008	MICROSCOPE OPTICAL BIOLOGY BINOCULAR 110/220V 50/60HZ AC/BATTERY	N	\$1,976.40	D
6650010190423	MICROSCOPE OPTICAL BIOLOGY GENERAL PURPOSE BINOCULAR INCLINED	N	\$10,760.98	D
6650009736945	MICROSCOPE OPTICAL STEREOSCOPY 15&20 EYEPIECE MAGNIFICATION	N	\$1,934.72	O
6545009268961	MICROSCOPE SET MED LAB EQUIPMENT SET LIGHTWEIGHT FIELD	D	\$4,307.91	
6515014586580	MICROSCOPE SURGICAL	N	\$2,800.00	
6540014919995	MICROSCOPE SURGICAL PORTABLE 37"LG 90/260V 47/440HZ	N	\$9,292.00	O
6515014603108	MONITOR CARDIAC:	N	\$13,623.54	O
6515014942325	MONITOR ICP EXPRESS DIGITAL INTRACRANIAL PRESSURE NUMERIC DISPLA	N	\$6,000.00	
6515014631775	MONITOR INTRACRANIA MULTIPARAMETER W/WAVEFORM 110/220VAC50/60HZ	N	\$8,154.90	O
6515014584077	MONITOR PATIENT VITAL SIGN PULSE OXIMETER 115V 60HZ	N	\$4,495.00	O
6665014498188	MULTI-GAS DETECTOR MICROMAX PORTABLE SMALL SZ 4.75X3X1.8IN	N	\$1,670.00	O
6520012983831	OPERATING AND TREATMENT UNIT DENTAL FIELD:	N	\$5,396.47	O
6515014681164	ORTHOPEDIC SYSTEM SURGICAL ELECTRIC POWER	N	\$20,709.05	O
4430012657246	OVEN,THERMAL DRYING,ELECTRIC	N	\$6,399.05	
6540008776464	PHOROPTER MINUS CYLINDRICAL LENS TYPE	N	\$3,864.61	O
6665014498422	PHOTOIONIZATION MONITOR 2020 MINIATURE	N	\$3,642.30	O

NSN	NOMENCLATURE	ARC	PRICE	MRC
6525004209588	PROCESS MACHINE RAD FILM AUTO DENT 115V 50-60HZ AC OR230V50HZ AC	N	\$1,331.10	O
6525012164988	PROCESSING MACH RAD FILM AUTOMATIC AC DEN 115/220V 23X15.188X12"	N	\$8,424.45	O
6525013456089	PROCESSING MACHINE RADIOGRAPHIC FILM AUTOMATIC 120/240 60HZ 2.5	N	\$5,050.80	H
6515013814456	PUMP I.V. INFUSION VOLUMETRIC PRTBLE BRTY OPER RECHARGEABLE 6V	N	\$6,900.23	F
6515014854362	PUMP INTRAVENOUS INFUSION 5"LG 4"W 2.2"HT POWER MINI RAPID IV	N	\$2,456.64	O
4110015060895	REFRIGERATOR BLOOD COOLING & STORAGE FIELD ENVIRONMENT	N	\$4,800.00	
4110012042673	REFRIGERATOR MECHANICAL BIOLOGICALS 110/220V 50/60 HZ	N	\$4,400.00	O
4110001764291	REFRIGERATOR MECHANICAL BIOLOGICALS 115V 60HZ AC 35CU FT MAXIMUM	N	\$3,310.47	H
4110011790124	REFRIGERATOR MECHANICAL BLOOD BANK 5.4CU FT 120/230V 50/60HZ AC	N	\$7,399.62	F
6515013435636	RHINO-LARYNGOSCOPE FIBER OPTIC FLEX 255MM LG 3.4MM OD WITH CASE	N	\$5,001.30	D
6665014649567	SCINTILLATOR PRESET BETA ISOTOPES TRIATHLER MULTILABEL TESTER	N	\$14,151.00	O
6540013759031	STEREOSCOPE VISION TESTING NEAR DISTANT W/SLIDES 115V 60HZ AC	N	\$3,775.80	H
6640014674732	STERILIZER LAB CRS 17X24X42IN 120V AC SELF CONTAINED & PORTABLE	N	\$10,571.00	D
6530013408001	STERILIZER SURG INSTR DRESS AC 115 TO 230 V ELEC 14X23.5X19.25"	N	\$2,518.81	
6530011885294	STERILIZER SURGICAL INSTRUMENT AND DRESSING 120/230V 1350W AC	N	\$4,549.20	O
6530011896960	STERILIZER SURGICAL INSTRUMENT AND DRESSING 120/230V 15002 AC	N	\$4,101.02	O
6530011289481	STERILIZER SURGICAL INSTRUMENT AND DRESSING 120V 1350 PRESS STM	N	\$1,773.48	O
6515014585969	STETHOSCOPE ELECTRONIC PHONESTETH	N	\$6,100.00	F
6515012846779	STIMULATOR ULTRASOUND HIGH GALVANIC 120/230V 50/60HZ 20W HVS500V	N	\$4,712.26	D
6515011677287	SUCTION APPAR SURG 120/230V 50/60HZ MOBILE PROGRAMMABLE HIGH VOL	N	\$3,646.10	F
6515011806984	SUCTION APPARATUS SURG 120/230V 50/60HZ AC BTRY/LINE OPER MOBILE	N	\$2,258.99	O
6515014609174	SUCTION APPARATUS SURGICAL PROGRAMMABLE BATTERY 11-30 VOLTS	N	\$2,673.24	O
6515011774928	SURGICAL KIT ORTHOPEDIC: BATTERY POWERED MULTIPURPOSE DRILL	N	\$10,759.26	O
6515014951668	SURGICAL UNIT ARTHROSCOPIC INTRA-ARTICUL	N	\$10,334.99	O
6630014763178	SYSTEM GAS CHROMATOGRAPH/MASS SPECTROMETER SYSTEM G202	N	\$48,000.00	O
6640014617938	THERMAL CYCLER W/O HEATER LID PROGRAMMABLE 96 WELLS 24X28X23CM	N	\$4,202.00	O
6530014876868	THERMOREGULATOR PATIENT SUITABLE F/HOSPITAL ENVIRONMENT	N	\$7,260.07	H
6640011772647	TISSUE EMBEDDING SYSTEM:	N	\$7,529.27	H
6515012870607	TOURNIQUET SYSTEM PNEUMATIC AUTO 110/220V 50/60HZ AC WITH CASE	N	\$6,478.20	O
6530011760703	TRACTION APPARATUS PHYSICAL THERAPY PORTABLE 120/230V 50/60HZ AC	N	\$3,603.30	O
6530012525591	TURNING FRAME ORTHO MOBILE SGL UNIT TURNING FRAME W/CART ASSY	N	\$7,301.95	O
6530009261975	TURNING FRAME ORTHOPEDIC BED STRYKER 87 INCH FRAME 22" WIDE	N	\$6,588.00	O
6520014679899	ULTRASONIC CLEANER	N	\$2,111.37	O
6520013136250	ULTRASONIC PROPHYLAXIS UNIT DEN PORTABLE 4"X7.4"X7.6" INPUT 115V	N	\$1,175.34	O
6515011929456	ULTRASONIC UNIT BLOOD FLOW DETECTION 120/230V 50/60HZ DOPPLER	N	\$2,995.00	D
6525014932209	ULTRASOUND UNIT DIAGNOSTIC PORTABLE	N	\$36,826.69	
6515014696996	VAPORIZER ANESTHESIA SEVOFLURANE VAPOR 2000	N	\$4,667.83	L
6530013259299	VENTILATOR PRTBLE VOL 120V 50/60HZ AC OR 12V DC PAT TRANSPORT	N	\$7,631.10	F

NSN	NOMENCLATURE	ARC	PRICE	MRC
6515011507840	WARMER BLOOD 115/230V 50/60HZ AC SOLID STATE PRTBL W/50IV EXT SE	N	\$793.15	O
6640014679283	WASHER MICROPLATE ACCOMMODATES ALL 96WELL MICROPLATES	N	\$3,915.00	O
6630014444280	WATER QUALITY ANALYSIS SET PERFORMS 27 TESTS	N	\$3,520.00	O

At present, analysis of historical maintenance data for these items is extremely limited. It is expected that the availability of data will increase the AMEDD's awareness of medical maintenance resource requirements and logistics responsiveness during combat operations.

Medical Maintenance Manpower Requirements for Support of Set the Force Agenda

A review of the Standard Requirements Codes (SRC) and Unit Assemblage Listings (UA) for the organizations included in the Set the Force Initiative and the AMEDD Investment Strategy revealed that an estimated 91,465 man-hours are required over the 18 - 24 month period to perform technical inspections of and to field the associated medical equipment. The Manpower Resources Requirement Table 6 includes the manpower requirements for the organizations identified as Tier 1, Tier 2, AIS, and also includes the USAMMA standard 33% estimated to recompense the estimated Battle Damage Assessment (BDA) of organizations deployed in support of Operation Iraqi Freedom (OIF).

Table 6. Manpower Resources Requirement

SRC	Unit Type	Quantity of Units	Total Man-Hours / SRCs	Total Man-Days / SRCs
08057L000	MEDICAL CO (MSB) HVY DIV	9	1,578	197
08058L100	MEDICAL CO (FSB) HVY DIV	27	3,477	435
08277L000	MEDICAL CO, MSB, AASLT DIV	1	73	9
08278L000	MEDICAL CO, FSB, AASLT DIV	3	219	27
08429A000	MED DET, PREVENTIVE MED	24	248	31
08437L000	MED CO, HVY SEP BDE (HSB)	4	289	36
08446L000	HHD, MED EVAC BN	6	45	6
08447L200	MED CO, AIR AMBL (UH-60A)	9	290	36
08449A000	MEDICAL CO, GROUND AMBULANCE	2	68	8
08449L000	MEDICAL CO, GROUND AMBULANCE	5	281	35
08456L000	HQS & SPT CO (ASB)	5	880	110
08457L000	MEDICAL COMPANY (AREA SPT)	34	5,317	665
08477L000	MED CO, SPT SQDN, ACR	3	327	41
08478A000	DENTAL COMPANY (AREA SPT)	2	436	54
08478L000	MED CO, DENTAL SVCS	19	2,379	297
08518LA00	MED TM, FORWARD SURGICAL	32	934	117
08527LA00	MED TM, HEAD & NECK SURG	4	53	7
08527LB00	NEUROSURGERY TEAM	8	230	29
08527LC00	MED TM, EYE SURGERY	6	275	34
08537LB00	MED TM, DIALYSIS	2	16	2
08736L100	HOSPITAL UNIT, BASE (CSH)	30	26,297	3,287
08736L200	HOSPITAL UNIT, BASE (FLD)	1	701	88
08736L300	HOSPITAL UNIT, BASE (GEN)	8	6,912	864
08737L000	HOSPITAL UNIT, SURGICAL	41	23,538	2,942
08738L000	HOSPITAL UNIT, MEDICAL	42	13,478	1,685
08739L000	HOSPITAL UNIT, HOLDING	1	79	10
08949A000	MED DET, MINIMAL CARE	20	812	101
08957A000	HOSP CO, 164 BED, CORPS	1	249	31
08958A000	HOSP CO, 84 BED, CORPS	5	1,951	244
31706L000	HQ & MAIN SPT CO,SOSB(ABN)	1	33	4
	Total Unit Support Requirement	355	91,465	11,432